Industrial FINISHING

Reg. U. S. Pat. Office

Devoted to Product Finishing in the Factory

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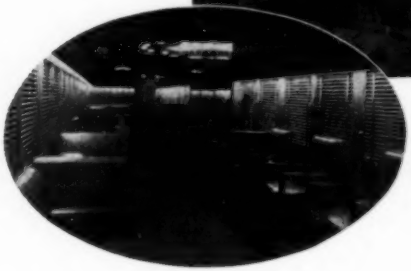
More Proofs

DeVilbiss Spray-Painting for the New York Central's "MERCURY"

The "Mercury" painted inside and out with DeVilbiss Spray-Painting Equipment.



Interior decorations mostly in rich tones of brown and rust, contrasted with light tans, greens and blues. Silver aluminum trim.

● **A striking example of the trend toward modernization of finishing methods and toward the increasing use of modern finishing equipment, is found in the New York Central's streamlined train, the "Mercury." All painting, both exterior and interior, was done with DeVilbiss Spray-Finishing Equipment. In all branches of modern transportation and industry, DeVilbiss Equipment is widely used for the rapid, efficient and economical application of high quality finishes.**

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Letters from Readers of "Industrial Finishing"

Editor's Note — These letters have been promptly answered and all of the inquiries have been referred to advertisers in the magazine. They are published here to indicate or suggest certain interesting trends of thought and activity in the industry, and to encourage further inquiries, comments and suggestions. The names and addresses of firms or individuals whose letters are published here may be had by writing to this office, or letters addressed to them in care of this office will be forwarded immediately.

High Bake Varnish

Will you kindly insert in your next issue, in the column "Letters from Readers of INDUSTRIAL FINISHING": "Want to know names of several large manufacturers of tough and hard flexible and non-flexible varnishes in gloss finish similar to porcelain. These varnishes are to be used on quality household metal products.—The Champion Stamping & Enameling Co., 200 Lexington Ave., New York, N. Y.

"Roxite"

Do you know of a clear varnish sold under the trade name "Roxite"? Noticing the finish on some tables in a restaurant in New England, I asked the manager what was used to produce the very highly-finished glass-like surface. I understood him to say that the finish was "Roxite," a product made by the Norfolk Paint Co. The probabilities are that I misunderstood him, as I cannot find any Norfolk Paint Co. According to the manager, the finish is proof against any sort of stain or discoloration from water, and the surface finish is practically like glass. I was told that three or four coats were applied, and each one rubbed down. It is possible that either I was not given the correct name, and quite evidently not the right name of the manufacturer.—N. R. & Sons.

We feel sure that the "Roxite" which you asked about is a product of the Norfolk Paint & Varnish Co., North Quincy, Mass.—Ed.

To Test Thinners

We are using thinners to reduce colored lacquer and wish to know if there is a way or an instrument made such as a hydrometer, or something, to tell the difference in the strength and quality of thinners that we purchase—and how many kinds of thinners there are on the market.—R. H. Co. (Store Fixtures and Sectional Partitions).

Mechanical Agitator

We have a customer requesting information on a mechanical agitator for drums. If you have any information along this line, will you please forward same to us?—K. A. Co. (Paintmakers, Varnishmakers).

Striping Tool

Some time ago there was run in INDUSTRIAL FINISHING a number of advertisements for striping tools. We have a suite coming into production on which we believe the striping tool could be used to advantage, but we cannot locate any of the old numbers that have the advertisements we recall having seen. Will you

This half of Auto Fender was CLEANED with a Magic Tack Rag before finishing. Note the smooth, deep luster. No blemishes, specks, lint or sand particles to mar the finish.

"MAGIC" TACK RAGS

IMPROVE FINISH 100%

MAGIC TACK RAGS clean every surface before finishing—bring out that deep, smooth luster, produce a faultless surface for white or colored finish. Why use "home made" tack rags when you can buy MAGIC TACK RAGS at trifling cost! They are tackier, do not dry—are dust proof and spontaneous combustion proof. Packed in dozen and gross lots or more. Made only by the

Wm. A. Juergens Co.
4036-40 Lagrange Street,
Toledo, Ohio, U. S. A.

If your dealer does not carry Magic Tack Rags, write us for sample.

FLOCKS

Wool - Cotton - Rayon

- IN ALL COLORS
- FOR ALL EQUIPMENT
- FOR EVERY PURPOSE

Skilled chemists in our research laboratory are at your service. Let us help you develop or reproduce that special effect or color tone. Send us a sample or description of what you need.

MYERS - LIPMAN
Wool Stock Co., Inc.
283-287 W. Broadway
New York, N. Y.
Pioneer Manufacturers
Since 1875

please furnish us with the names of some of the manufacturers of this type of tool?—G. Furn. Co.

We are interested in purchasing a striping machine for painting stripes. Please advise us where we could secure this type of machine.—S. W. F. (Radio Electrical Apparatus).

Newco Rubbing Compound

We are anxious to get the address of the concern that puts out Newco Rubbing Compound, which we understand was manufactured in Cleveland, Ohio, but so far we have not been able to contact them. If you can supply us with this information from your files or other sources, we will appreciate it.—H. D. Co. (Metal Caskets).

We find in our directory of trade names a "Newco" liquid wax, which is listed as being made by the Newco Co., Mt. Vernon, New York, N. Y. Perhaps this is the company you have in mind.—Ed.

Airless Spraying

Kindly send us the name of the manufacturer of equipment for "Airless Spraying." (See also page 5, Sept. issue).—B. Mfg. Co.

We understand this is a product of the Electrical Painting Equipment Co., 247 Park Ave., New York, N. Y. —Ed.

Wrinkle Finishes

We would appreciate information on wrinkle finishes, or advice as to whom we should contact for such information. We are equipped for spray painting and have, up to the present time, standardized on crackle finishes for our equipment. Any information you may be able to furnish will be sincerely appreciated.—B. & N. Co. (Radio Compass & Direction Finder).

Concrete Floor Paint

In your August issue, on page 7, you publish a letter from T. R. C. (With Paint Mfr.) requesting information regarding a concrete floor paint which will stand up under hard usage and which will stand acids and alkalis. We have been supplying Densocrete concrete floor enamel for some years; it has given splen-

4 NEW PRODUCTS

We feel all readers will be very interested in knowing all about them.

WATER-STAINFILL

A definite combination of Water Anilines and pigments to produce in a single operation, a Water Stained and filled surface.

PILGRIM MAPLE

Beautiful light brown color for Maple. New and unusual. Send us some of your panels and we will finish them for you.

PATINA WALNUT

A brand new addition to our long list of new and attractive colors for Walnut, Gum, Birch or Maple.

DUBAR BLEACH

The newest and most powerful bleach available today. Satisfaction guaranteed.

V. J. DOLAN & COMPANY, INC.

1830-32 North Laramie Avenue **Chicago, Illinois**

Manufacturers of
"Unquestionable Quality" Wood Finishing Supplies

"Here's that FILWHIRL ENAMELER *you've heard so much about!"*

You've read about how it is cutting finishing costs for others, putting on better surface coatings, speeding up production in product-finishing, coating many more articles, or parts, in an 8-hour day. The FILWHIRL ENAMELER can do this, and you can bid good-bye to your cost troubles. Send us samples of your products for coating, and we will finish and return them for your inspection without any obligation. Write us TODAY!

THE LEON J. BARRETT CO.
Grafton Street, Worcester, Mass.

A Beautiful Blonde

maple finish

Worth investigating! A new finish that brings out the full beauty of maple. Easily applied without exacting judgment or manipulation.

Simply apply one spray coat of L-Mac-E Blonde Maple Coating No. L-266. Allow 2 hours for drying, lightly sand with No. 5 or 6 paper. Next apply two or three coats of L-Mac-E water white lacquer, No. L-1032. Rub and wax with L-Mac-E blonde maple wax, No. 779. Write for sample panel or free working samples.

The Lawrence-McFadden Co. 1400 Frankford Ave., Philadelphia, Pa. 427 W. Erie Street, Chicago, Illinois

SILK SCREEN METHODS of REPRODUCTION

Fully Illustrated by the Author. Leatherette Binding. Size 5x7½ in. 193 Pages. 98 Illus...... $3.00

THIS new book is intended for Sign Painters, Card Writers, Display Men, Furniture Manufacturers, Novelty Manufacturers, Glass Etchers and For Domestic Use.

Every detail of the silk screen process is presented clearly in detail. All equipment is fully described and its use illustrated. All materials needed in the various kinds of silk screen work are mentioned with respect to their use to advantage. Estimates of costs and prices to charge are given.

Practical Publications, Inc.

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did service and is not attacked by the chemical cleaning compounds regularly used in the cleaning of concrete floors. We will be glad to get in touch with T. R. E.—The Densol Paint Co.

Heat-Proof Finish

I would like to know more about the heat-proof finish mentioned in a letter signed "Cladite Inc.," on pages 5 and 6 in the August issue of INDUSTRIAL FINISHING. Will you please send me the address of Cladite Inc., or inform them that I would like sample of zinc, monel and stainless steel finishes mentioned. I may have use for large quantities of materials such as they describe.—N. E. A. Co. (Electric Appliances).

Coppr-Black

In reference to the letter of Mr. Geo. A. Endom, appearing in the August 1936 issue of INDUSTRIAL FINISHING (page 62), we would be interested in securing a sample (one pint would be sufficient) of newly developed copper paint to be marketed under the trade name of "Coppr-Black."—S. O. Co.

Porcelain Repair

In the issue of INDUSTRIAL FINISHING for January 1936, on pages 32 and 37, you gave brief descriptions of two articles, namely, Vit-Re-Pair and Horn Porceline Patch. I am a distributor of industrial finishes, and I have had inquiries for such products.—G. S. P.

Bitumastic

I am interested in all information concerning Bitumastic — as to its adaptability for use on aircraft, seaplanes, general manufacturing and building maintenance. This material must be of a nature that it can be applied cold with a brush.—S. U. H.

Oil Bar-Top Finish

We noticed A. T. Mfg. Co's. inquiry about a formula for oil-finished bar tops (August issue, page 5). We too have had trouble right

(Continued on page 71)

★★★★★★★★★★★★★★★★★★★★★★

Matches Lumber

Eliminates Knots

Equalizer and

Absolute

Toner

1. Produces uniform finished case from unmatched lumber—covers all dark sap streaks and knots.
2. Does not injure grain or texture.
3. Gives clear transparent fast-to-light finish.
4. No special skill required to spray.
5. Does not contain dangerous caustic or bleach.
6. Is now being used by leading manufacturers.
7. Reduces material costs and saves time.

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Stain—Seal

Seals and Stains in "1" Operation

— AND —

FREE Samples or 5-Gallon each at Drum Price

Write Either Plant.

Woodfinishing Products Co.

34 Industrial St. Bronx, N. Y. City

Winston-Salem North Carolina

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Venetian Blinds

by Rosalie Flank
American Furniture Mart

THE MUSHROOM growth of the venetian blind industry which developed almost overnight from a class to a mass market; the unprecedented consumer acceptance of venetian blinds in the past few years; the unlimited possibilities this field still holds for the increasing number becoming engaged in the manufacturing of these blinds, attempting to get their share of the fat mellon which still stands slicing; this has created the inevitable competition.

Contention for superiority in this field therefore revolves upon three distinct features of blind manufacture — the wood, the mechanical operation, and the finish.

Inasmuch as only certain types of wood adapt themselves to these blinds, namely basswood, cedar and similar woods — kiln-dried to prevent warping and sagging—and mechanical operation based on a fundamental principle governed by patents control the variations in operating and tilting gear—the main point of contention falls upon the matter of finish; for the behavior of the finish determines the amount of protection that will accrue to the investment made by the purchaser of these present-day venetian blinds.

In an attempt to secure specific information concerning this important detail of the manufacture of venetian blinds; the affects of the various deteriorating elements; progress made in perfection of the finish and methods

« « « « PERFECTION OF THE FINISH FOR DECORATION AND DURABILITY

Illustration, courtesy of Patterson Shade Company, Indianapolis, Indiana

used in testing and proofing; an interview was obtained with one of the pioneers in the industry—The Chicago Venetian Blind Co., Chicago, Ill. The information, as told by Don L. Jacobson, General Sales Manager of the company is enlightening and gives a cross section of the work "behind the scenes," as carried on by leaders in this rapidly growing industry.

According to Mr. Jacobson:

"In order to maintain appearances on venetian blinds it is necessary that they be washed periodically. The amount of washing will be determined by the care exercised in dusting the blinds and the frequency of the dustings. If dusting is neglected, the resultant accumulation of dust and dirt ingrains itself into the wood and can be removed only through the use of strong soap and water. Very often one washing with strong soap and water will remove most of the paint on inferior venetian blinds, and results in the necessity of repainting.

"Another element that has a deteriorating effect on the finish of blinds is the heat of the sun behind the glass. Over a period of three or four years this constant application of heat results in crazing and checking of the finish, with the resultant necessity of repainting the blinds.

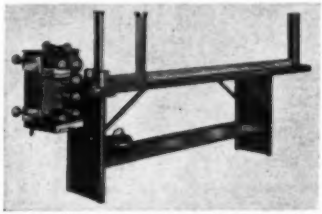
"The foregoing is a common occurence on blinds constructed by inexperienced or unscrupulous manufacturers who cut costs too low in their eagerness to capture more business and

make greater profits. Unfortunately this has done much to hurt the industry, for all have been condemned for the work of a few.

"To counteract the deteriorating effects of strong alkalis and heat, our laboratory has perfected a paint used exclusively by us, which is manufactured under a specification that absolutely counteracts these ill effects to the finish of the blind. The paint is a synthetic enamel, and is applied in three coats mechanically. It is acid and alkali resistant, and the binder has a bakelite content that prevents crazing or checking under any heat that could be generated from sun behind plate glass, over a long period of years.

"In order to determine the exact behavior of our blinds under adverse conditions, they have been put to severe tests. Blind slats covered in the regular way with our special paint were immersed in oakite—a strong alkali solution which is used for the degreasing of metal. This was heated to 150°F. and the slats immersed therein for a period of two hours. Upon being withdrawn from the solution, the paint was firm and hard and although the wood had swollen somewhat, there were no adverse effects to the finish. In contrast to this, slats taken from blinds manufactured under less exacting conditions were immersed in this solution; after two minutes the paint was soft as putty, and after eight minutes the paint was completely dissolved and removed.

"After this test was made, it was considered that this might be too drastic a test, and that the average blind owner would not use such a strong solution for washing the blind, so another test was made. A package of Ivory Flakes was dissolved in a 12-quart pail of water. Pieces of our slats and those of some competitive manufacturers' were immersed in this solution. After four days the emulsification was so great that the solution became jello-like. At the end of two weeks the slats were removed from this solution. Our slats were intact and, with the exception of a slight swelling of the wood, no deleterious effect could be observed in the condition of the paint. It did not become soft or scale or peel in any way, shape or manner. All of the other specimens of slats used for the test were in very poor condition. The paint disintegrated in varying degrees, ranging from soft paint which could be removed with the thumb nail, to complete disappearance of the paint from the



Automatic power-feed machine to paint both sides and edges of Venetian slats.

slats. These tests demonstrated unquestionably that high-priced paint, properly applied, does protect the investment of the purchaser of venetian blinds.

"A quick effective consumer test which we recommend is to drop three or four drops of grain alcohol on a blind slat. Apply a match to this alcohol and it will immediately burn off. This will have no effect on the paint on our

slats, but the same test applied to inferior blinds will cause the paint to blister. This is an exaggerated test of the action of paint under heat, but it is the consumer's protection of quality."

To Prevent Stenciled Stain from Creeping

RECENTLY I solved an annoying problem that confronted me—the application of wood stain to a slender stenciled design on a veneered surface. This job called for stained decorations on a number of veneered panels; originally it was a stenciled proposition. It consisted of placing a 2-in. monogram G within a 5-in. circle. The lines of the letter G and the circle were to be ⅛-in. wide. Then the entire panel, which was 10x19-in., had to be "boxed" on both ends by a ⅛-in. border.

The decorating of this panel had to be done with a stain. I could not make a clean-cut line with the stain; it would run or creep with the grain of the wood, making the line ragged, uneven, unsightly. I tried several ways of doing this work with and without the stencil, but did not succeed in doing the work rapidly or without first doctoring the stain.

Finally I decided that on this particular job the stencil was impractical. Then, in looking over the July issue of INDUSTRIAL FINISHING, on page 48 in the "What's New" section, I saw a new tool, "The Master Bi-Cutter." This gave me an idea. I tried one, and it worked. I did the job easily and quickly with the aid of the cutter. The double cutting tool made the two parallel cuts of sufficient depth in the veneer to eliminate the stain creep when stain was applied with a brush between the double cut lines. The straight border lines were cut by running the Bi-Cutter, with ⅛-in. head, along a straight-edge which I elevated the thickness of a match along the length of the panels. The circle was made with the compass cutter, equipped with the same ⅛-in. Bi-Cutter head. The G was cut with the Bi-Cutter free hand.

All in all, the job was quite successful. The cutting time for the 21 panels wasn't long nor tedious. It could be done again, I am sure, in the same length of time—possibly in less time than would be required ordinarily to cut a stencil. To apply the stain, even if "doped," through the stencil would not insure the perfect uniform results, nor insure against the stain creeping.

If this problem confronts you, try my way—and my thanks also to the "What's New" department in INDUSTRIAL FINISHING magazine.—Harry J. Henricksen.

EDITOR'S NOTE: Mr. Henricksen, with the Decorative Stencil Co., sent this account of his experience and a letter to the Moore Air Brush Co., 4609 Grace St., Chicago, Ill., who, in turn, forwarded it to INDUSTRIAL FINISHING.

40% Ahead of 1935

Mr. V. J. Dolan, President of the V. J. Dolan & Co. (wood finishing supplies), Chicago, Ill., announces that the company's August sales have established an all-time high, and that sales for the year are approximately 40% ahead of 1935 which was the company's best year.

Cleaning and Priming

Galvanized Iron and Zinc-Coated Metals

by Geo. A. Endom

THERE ARE still a considerable number of finish users who are of the opinion that an applied finish, either oil-base or synthetic, will not adhere properly to galvanized iron, zinc or other plated metals, or to any soldered joints. I believe this erroneous idea has come into existence partly through the use of improper materials and partly through failure to carefully analyze the various causes of trouble which enter into the application of finish coatings to these kinds of surfaces.

Starting from the beginning, let us first review some of the troublesome factors that must be entirely eliminated before attempting to apply any finishes of the enamel type. I make use of the word enamel as applying to either lacquer, oil-base, or synthetic materials.

Causes of Poor Adhesion

In the order mentioned, we have four basic deterrents to true adhesion, as follows:

1) Acids left from plating, galvanizing or soldering. These are seldom entirely removed by rinsing.

2) A chemical residue, almost undetectable, which seems to be formed by oxidation during and immediately after the final plating rinse. I have noticed by erperiments that this condition is increasingly aggravated as the time of exposure before painting is increased.

3) Dirt and oil residue either from handling or from unclean atmospheric conditions.

4) Last but not least, although a good finisher should exercise more care in its elimination, a great deal of trouble is caused by moisture forming in crevices and pores of the metal. Not only from washing or rinsing operations does this moisture remain, but a high percentage of humidity will dampen metals (especially plated or hot-metallic coated surfaces) sufficiently to prevent any true adhesion.

Cleaning and Drying

When we are acquainted with the main reasons that lead to trouble in obtaining a durable finish we find it necessary to proceed in their elimination.

Items 1 (acids), 2 (chemical formation), and 3 (dirt and grease) can be removed by the use of a commercial cleaner. (The

name of this product can be furnished by INDUSTRIAL FINISHING Magazine.)

Item 4 (moisture) is the one feature which, through carelessness or improper facilities, causes most of the trouble. Moisture can seldom be entirely removed by drying with cloths or by relying upon evaporation alone. The safest method is to bake the surfaces dry in an oven, or subject them to a warm air-blast. Since the latter method involves the use of a conveyor system it is too expensive for the average finishing shop.

Some time ago I outlined, in INDUSTRIAL FINISHING Magazine, a method of cleaning and painting cadmium-plated steel (March, 1936 issue, pages 22, 23, 24). For the benefit of those readers who may be interested, I might say that the same method of cleaning and priming is applicable to galvanized iron, zinc, zinc-plated metals and soldered joints, except that a stronger solution of the cleaner must be used (to increase the etching of the surface) and greater care must be exercised in drying the surfaces thoroughly and priming them as soon as possible after drying.

In recapitulation of the subject of cleaning, drying and painting, as presented in previous issues of INDUSTRIAL FINISHING Magazine, the following outline of procedure is presented:

1) Immerse the parts to be cleaned in a tank of full-strength cleaning solution. Upon removal, these parts should be scrubbed with a stiff fiber-bristle brush to loosen any particles of dirt that may be clinging to crevices and soldered joints on the surface.

2) Immerse the parts in a cold water rinse.

3) Immerse again in 180° F. hot water.

4) Upon removal from the hot water bath the cleaned metal should be handled only with gloves, hooks or other mechanical means. Never allow the bare hands to touch the chemically clean surfaces, as any print of fingers or hands affects the surface adversely.

Parts may be dried quickly after the final hot water rinse by baking for about 20 minutes at from 150° to 180° F. or, if clean dry air is available, the parts may be dried by air pressure.

Priming and Finishing

Now that we are assured all moisture has been removed, we should prime the parts as quickly thereafter as possible. I suggest using a red oxide or a zinc chromate primer. If the latter is used, be careful to avoid applying too heavy a mixture.

Zinc chromate primer, thinned with toluene to the extent of covering only enough to show a yellowish green tinge, will give ample protection, adhere tenaciously and provide an ideal base coat for almost any finish. If applied without sufficient thinning, the primer film will be too brittle because of too much pigment content. Always apply a thoroughly wet coat of this material.

For finish coats over this base I would recommend any synthetic enamel of reputable manufacture. Second choice would be an oil-base enamel. Lacquer enamels seem too brittle for galvanized, zinc-plated or cadmium-plated metals, or for soldered joints unless a greater amount of plasti-

cizer has been added, and this is not advisable when a hard finish is desired.

It is always good policy to consult the manufacturers of finishing materials, as most of them are in position to furnish the finish most suitable for the job.

Remember, however, that regardless of how well formulated a finishing product may be, it will not adhere for any length of time unless it is given a fair chance by being applied to a surface that is chemically clean and has been etched enough to give sufficient "tooth" to the one or more coatings that follow.

Automobile Colors at European Show

THE OUTSTANDING feature admired by the fashionable crowds who witnessed the premier automotive style spectacle at Deauville recently — the 1936 Deauville Concours d'Elegance en Automobile — was the luxury of color ornamentation shown on the cars and the fine degree of color sense used in choosing the complimentary hues worn by the drivers and their passengers.

Among the most enthusiastically received features of the showing were coupes in bright purple-blue combined with white, one secondary accent such as variations of green, or with smart looking yellow beiges. Touring cars presented attractive combinations of red exteriors and brown leather interiors. Other models featured dark green effectively associated with aquamarine; in some cases these two colors were cleverly balanced, the upper and lower areas being dark green and the aquamarine extending the length of the car laterally between the two.

Popular convertible models were displayed in many daring overall treatments of orange. In some instances, the interior and accessories were colored to match. The resulting effect was a definite success. Other desirable combinations were produced with cream accented with red mouldings, red wheels and the interiors in pigskin upholstery supplying smartness and variety.

Another interesting entry in the show was a town cabriolet entirely in black, with a cream moulding on the side. Cream and yellow entries were as popular as they were numerous, and some of these combined perfectly with certain shades of maroon trimmings.

Designers also decorated hardware with colorful plastic knobs in keeping with exterior color treatment. Many of the cars stressed steering wheels in exact reproduction of exterior colors. There was a notable lack of running boards, which might be indicative of a trend in this direction.—HOWARD KETCHAM (Duco Color Advisory Service).

Metal Products Exhibits

A remarkable educational exhibit of all kinds of metals, including various coated and finished metal surfaces, is being held on the third floor of the International Building, of Rockefeller Center in New York City. It is attracting a great deal of attention and comment. Among the exhibitors are three of INDUSTRIAL FINISHING'S advertisers — Maas & Waldstein Co., Roxalin Flexible Lacquer Co., and Stanley Chemical Co., who are displaying their finishing materials applied on metal products of various kinds. The public is cordially invited to this exhibition, which is open every week day from 10:00 A. M. to 6:00 P. M., except Saturday when the closing hour is 3:00 P. M. Admission is free.

Wrinkle Finishes

by James A. Bede

I believe I have found something that will interest a number of foremen who are using wrinkle finishes. I am writing this article, not from the technical angle—I know a little about it—but more from the standpoint of the finishes' practical application.—

James A. Bede
Foreman Finisher

IN THE LIST of novelty finishes, few compare in all-round utility with the so-called "wrinkle finish," which is available in several different patterns and colors. It has beauty, good adhesion, resistance to chipping, and best of all it covers many imperfections of the metal, eliminating the need for a surfacer.

The wrinkling action is brought about by the uneven drying of the film in the process of baking. However, selection of the right brand of paint is of the utmost importance. This is one finish that many paint manufacturers are not capable of turning out satisfactorily. The writer has tested many paints and found a surprisingly high percentage quite shoddy—although the paint chemists conceded that the samples submitted were the best they could formulate.

Applying this finish is a little more difficult than putting on ordinary enamels or lacquers, due to the fact that it has to be applied more heavily in order to wrinkle. Too much paint at any one point creates a sag, and not enough leaves the film shiny and smooth—in either case necessitating stripping the piece and respraying.

Clean the Metal Thoroughly

The need for a thoroughly clean surface cannot be over stated. Dust does not matter, but a greasy, oily surface is a source of rejection. I believe it is important to degrease more carefully for a wrinkle job than it is for smooth lacquering or japanning. Because the finish covers imperfections, there exists the temptation to become negligent in the cleaning operation, with the consequent running into trouble—a trouble that is usually attributed to other causes.

Spraying for Wrinkle Finish

Because of the comparatively heavy film required, it is highly important to employ a pressure system, or at least a gravity can when spraying. The common syphon cup is not satisfactory

where a volume of production is attempted. The proper air cap and needle should be selected—one that has the greatest atomizing action. The air pressure should be in the neighborhood of 80-lbs.

Thinning the Material

In thinning the paint, great care must be taken to attain uniform viscosity in all batches. The addition of 10% butyl alcohol in the thinner (if the paint is of synthetic type), tends to reduce the viscosity, yet leaves a high solid content. The same desirable objective is also accomplished by heating the paint after the thinning. A simple procedure (for heating) is to lower the paint container into a tank of hot water, taking the precaution, however, to keep a lid on, as vapor and steam would otherwise condense in a cold can of paint.

A New Procedure in Finishing Castings

The wrinkle finish is used extensively on castings because it produces a satisfactory finish in one coat.

I had an unusual experience that may be of interest and value to many readers of this magazine. We were required to paint a large number of small round castings which are used on electric house fans. To dip these castings into full-bodied paint was not satisfactory because it left a heavy drop of paint on the bottom. Yet the most one man could spray was 400 pieces an hour, which was far short of the requirements. After various experimentation, I developed a method of dipping the castings, previous to spraying, into a very thin solution of the paint. I reduced the paint over 100%, which only filled the pores of the casting. With that method we were able to step up production to 1200 pieces per hour. The man-hours of labor was reduced from ten hours per 1000 pieces to four hours. That included all operations for the paint department.

Baking the Wrinkle Finish

Baking is usually carried out at a temperature of 200° or 250° F., usually within the range of all ovens except steam ovens. When gas is used as a fuel, it is preferable to have indirect combustion, for the presence of impurities in the gas tends to react upon the finish.

In conclusion, I want to emphasize again the need of thorough cleaning. If any of you readers have trouble with your finishes, check your method of cleaning and you will find that you have eliminated the greatest danger of trouble.

Lacquer for Paper

THE VALUE of nitrocellulose lacquer coatings to give durability and enhance the appearance of paper is becoming more and more widely recognized. For certain purposes, lacquer meets needs not filled by other type coatings and is being used on labels, wrappers, and numerous other classes of printed or lithographed material. Increased sales appeal results when packages are protected and made more attractive. Merchandisers have therefore readily accepted lacquer coatings. Other users of advertising displays, the suppliers of

lacquer materials, and the finishers are all manifesting great interest in its further use.

Pyroxylin-coated paper has been known commercially for a long time, but within the last several years there has been a substantial increase in the use of lacquer coating on paper. Manufacturers of food products, cosmetics, and industrial specialties have shown how lacquer-coated packages have increased the marketability of their wares. In some cases machine handling of lacquered packages has been speeded up to effect economies.

One advantage of lacquer for coating paper is found in the fact that it combines the unusual qualities of surface protection and improvement of the appearance. Lacquer is unusually resistant to water, grease, oils, fats, alkalies, and stains. It is flexible and quite hard, will not crack, nor will it become tacky. It imparts a rich glossy sheen which is water white, and remains so. One particular advantage is that lacquer can be applied in heavy coatings to produce exceptionally attractive satiny effects.

The application of lacquers is not difficult; a roller-coating machine is often employed.

The formulation of lacquer is a problem of the supplier, but a knowledge of the characteristics of the ingredients by others concerned in its use will aid in the production of the most satisfactory jobs. All nitrocellulose lacquers for papers are made with nitrocellulose dissolved in solvents and plasticized with some acceptable plasticizer such as dibutyl phthalate. A resin is usually added. Principal considerations in formulation are the satisfactory flexibility and freedom from odor.

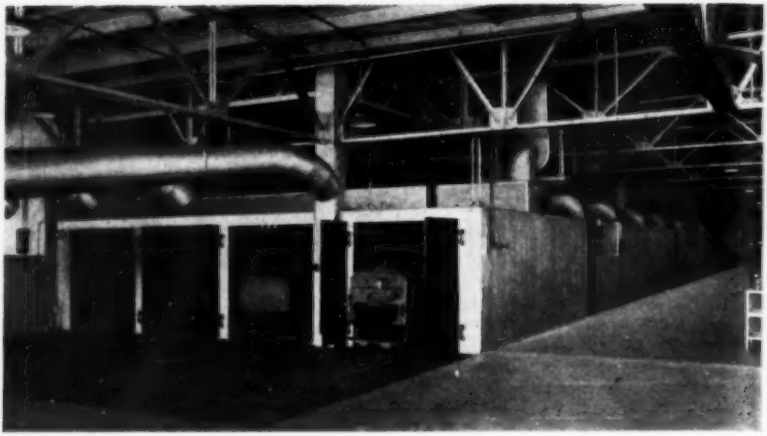
Since lacquers on paper are almost always force dried to speed up production, blushing is not a serious problem, and formulas high in alcohol content may be used. Freedom from odor on drying and residual odor in the dry coating are important, and alcohol is an excellent component from this standpoint.

Most of the difficulties which are encountered in the production of thoroughly satisfactory paper lacquer jobs can be met by a complete understanding between the lacquer supplier, finisher and the user. Hard papers and inks with low wax content are said to be most adaptable, but these materials should be selected with the cooperation of the printer, the customer, and the finisher. Water-lacquer emulsions can be used on papers which are too porous to take other lacquers.

The future of this durable and attractive finish is particularly promising for all kinds of wrapping and packages, and is one of the most interesting developments of the art of modern packaging. —*Solvent News.*

Metal Cleaning Book Free

An attractive 12-page booklet, entitled "Scientific Metal Cleaning", has just been published by Detroit Rex Products Co., 13005 Hillview Ave., Detroit, Mich. This booklet describes in detail the applications and advantages of Detrex Degreasing with Perm-A-Clor or Triad safety solvents, and the applications of Triad alkali cleaning compounds and strippers. It is well illustrated with photographs of various standard and special designs of Detrex Degreasers. These machines are used for the rapid and economical cleaning of metal products prior to finishing, inspection or heat treating. Emphasis is placed upon the expert engineering service and the latest developments in cleaning technique offered by this company.



Metal-Finishing Ovens

THREE MAJOR points to consider when contemplating the selection and use of new ovens, or the reconditioning of old ovens for bake finishing, are:

1) Oven construction.
2) Method of heating.
3) Material handling.

These three problems are interrelated, yet each one has certain features that may be studied independently. Naturally, with three distinct problems each having variables, the number of possible combinations is extremely large; therefore certain leading oven manufacturers follow the policy of studying each oven problem individually and recommending the particular combination of equipment that best fills the needs. In the interest of economy these concerns have developed certain standard parts or units and certain methods which often may be applied, but these are used only where advantageous.

Editor's Note: Material for this article was furnished through courtesy of the J. O. Ross Engineering Corporation of New York.

Oven Construction

The predominating type of construction for bake-finishing ovens is the insulated panel, made of two sheets of metal separated by rock wool, aluminum foil, or other insulating material. The thickness of panel is determined by the temperature to be maintained, greater insulation being required for higher temperatures. Choice of insulating material is determined by a number of factors, such as:

1) The temperature range; for example, an asbestos paper will not stand the same temperature as rock wool.

2) The specific application; for example, a high vertical panel filled with rock wool, must have the blankets suitably reinforced to prevent sag or bulge.

3) The weight or heat retention; for example, aluminum foil has practically no mass and consequently no heat retention.

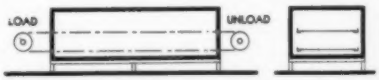
Likewise the type of metal used for the panel depends on the service involved. Corrosion or appearance may dictate the use of galvanized iron, copper, aluminum, alloy steel, or vitreous enameled sheets, but the majority of ovens are built of black steel painted to suit the plant surroundings.

The construction of the panels is fully as important as the materials from which they are made. They must have strength and rigidity so they will not get out of shape; must have no projections to interfere with cleanliness or appearance; must have tight joints to prevent leakage; must have a minimum of "through metal" to prevent loss of heat; and they must be adaptable to suit the structure to which they may be attached.

Panel construction permits complete fabrication in the oven manufacturer's plant and easy assembly in the user's factory. It lends itself to increasing oven size at a later date, and to dismantling and reassembling at a different location if necessary. It is this type of construction that has been adopted by the majority of the automobile manufacturers. Panel construction may be used for batch-type ovens, tunnel-type ovens, or overhead conveyor ovens. It has been used for ovens approximating a 6-ft. cube, and for ovens many hundred feet long.

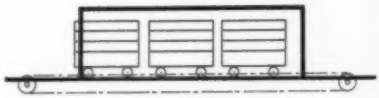
Diagram illustrations showing several different types of industrial ovens for modern bake finishing. Variations or combinations of these can be designed to suit special conditions for modern production.

Tower dryer.

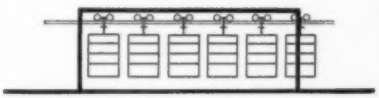


The typical straight passage conveyor dryer.

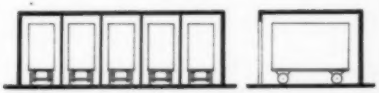
Cross-bar conveyor with inclined entry oven.



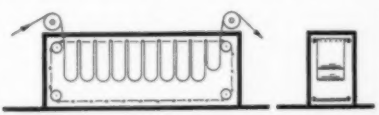
Truck-type tunnel oven with the floor conveyor.



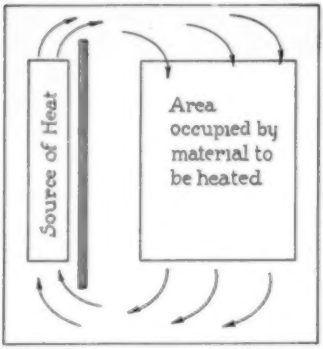
The tunnel oven with monorail conveyor above.



Example of multiple-batch or truck-type oven.



Festoon dryer for continuous flexible sheets.



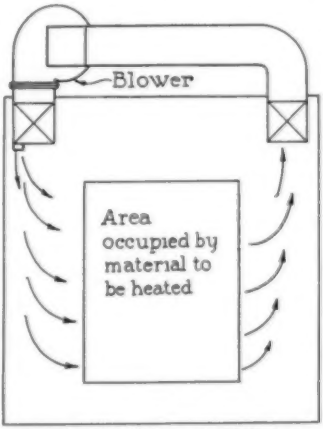
Natural convection—circulation of air in an oven due to temperature difference.

Method of Heating

The method of heating may be studied from two points of view —source of heat and method of application. Conventional sources of heat are steam, electricity, gas, oil, and butane. Steam is used, when available throughout the year, for ovens operating within its temperature range, the range depending on the steam pressure available. For ovens operating at temperatures over 250°F., gas, oil, or electricity is generally employed, the choice depending on convenience and economy.

Methods of applying heat may be divided into: radiation, conduction, natural convection, and forced convection. Radiation — for example, the use of steam pipes, hot electric elements, or radiating gas tubes directly in the oven—is seldom used because of the resultant lack of uniformity in oven temperature. Parts directly in the path of radiant heat are over baked, and other parts under baked.

Forced convection — the mechanical circulation of heated air in the oven—is the method recommended for best results because when properly arranged it gives uniform temperatures, a uniform product, and a shorter baking or drying time. The material in process is heated by circulating hot air, and since the circulation is rapid, the air temperature is uniform and all parts of the work are equally affected. Also, because of the motion of air over the surface of the material, a more rapid transfer of heat to the work, or evaporation of moisture or volatiles takes place. However, forced convection ovens must be well designed to give satisfactory results. Proper consideration must be given to duct design, air velocities and distribution, stream lining, turbulence, eddy currents, induced flow, and the many other factors involved. For instance, even on a small batch-type single-truck oven, several methods of circulating the air may be used, the selection de-



Forced convection—mechanical circulation of heated air in the oven by blower.

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Many of these concerns have become acquainted with *1617* first during the summer months when its use has been required to avoid spotting out troubles. Better mileage, worthwhile reductions in their refinishing costs, and the improvement in the quality of their product have justified the adoption of *1617* for regular production the year 'round.

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It has excellent adhesion, is extremely hard and resists wear. . . . Equally desirable for spray or dip application. . . . Try *1617*—the Original Non-Spotting Lacquer—and become convinced.

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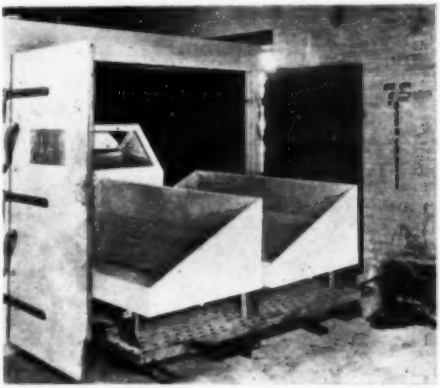
pending on the material itself, the method of loading, spacing and clear areas, dusting, etc.

Where groups of batch-type ovens are desired, it is often possible to heat them all from a single source of high temperature air, and yet control each oven independently to its own time temperature cycle.

In continuous ovens it is often desirable to maintain a predetermined temperature curve throughout the oven, to properly process a material. This is accomplished by zoning, each zone being independently and automatically controlled.



Metal store fixtures . . . through continuous tunnel oven

In some tunnel ovens, counterflow between work and air is most economical since the exhaust is taken from the coolest part of the oven, whereas in others it cannot be used.

Really, there is no substitute for wide experience in air handling to determine the proper methods of applying heated air to ovens.

The source of this heated air may be: 1) Steam, using extended surface heaters for the lower temperature range; 2) electricity, using resistance strips placed in the air circulating system, or 3) fuel-fired air heaters. The latter may use oil, butane, or gas and may be divided into two general classifications — direct and indirect.

The direct type is used where products of combustion may be circulated in the oven without harming the material handled. This method is inexpensive and is susceptible to accurate thermostatic control. Where only clean fresh air is to be circulated, the indirect type of heater is used. This type of heater has been universally accepted by the automobile industry and other metal-finishing plants for the baking of paints and enamels.

Material Handling

The method of handling material in an oven is influenced not only by the material itself, but also by the position of the oven in the plant production schedule, or the processing of the material before and after the oven cycle. For instance, for a continuous flexible sheet being coated on one side, a straight pass or festoon dryer could be used, whereas for 2-side coating, a tower dryer or horizontal festoon might be used.

The material to be dried might be placed directly on trucks or on trays resting on trucks, or hung

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S-W Kem Baking Enamels are used on Faultless Washers because these enamels produce a rich, smooth, colorful finish that withstands years of use and abuse. And S-W Ajax Insulating Varnishes insure lastingly dependable service from all Holland-Rieger motors.

For all your finishing needs remember the S-W Color Service and the S-W Paint Engineer are your aid in developing effective color treatments and choosing the right finish to help your products sell. No cost or obligation. Write The Sherwin-Williams Co., Cleveland, Ohio and all principal cities.

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from a conveyor. This applies to metal parts which may be conveyed through a dip tank and oven, or hand dipped and placed on a conveyor or truck; or sprayed and placed on a cross-bar conveyor, monorail conveyor, or floor pusher-type conveyor.

The most convenient and economical method of handling will depend not only on the physical characteristics of the material but also on the conditions to be maintained in the oven, and the volume of work being handled. A small volume of work does not justify a conveyor system, and large volumes, requiring special time temperature cycles, can often be more economically handled in batteries of batch or truck-type ovens. Physical conditions within the plant itself, or space limitations will often be a determining factor in conveyor design. For example, where sufficient head room is available, a long dryer or oven suspended from the ceiling or roof may be used, thereby occupying no floor space. In another case, where length is not available, a multipass conveyor might be desirable in order to get sufficient travel within a short oven.

The method of applying heat may affect the conveyor design. Requirements of counterflow or parallel flow, the amount of free area between parts, and other air-movement problems will often dictate the particular type necessary. Really, factors entering into the material-handling phase of bake-finishing are considerably involved. Each problem should be thoroughly investigated by engineers and recommendations made to suit, based on previous experience on similar problems.

Associated Problems

Many oven installations bring up associated problems of ventilation, space heating, or "makeup air" systems. This is especially true in a metal-finishing plant where metal-washing machines, spray booths, and exhaust systems of various kinds are in operation. The air exhausted by this equipment must be replaced by tempered air that should be cleaned and conditioned for best results.

In ceramic plants and others of like nature, waste heat is often available in large quantities; the recovery and use of this heat in baking or drying ovens is often a good investment.

The reputable oven manufacturing company's experience in these and other affiliated problems enables them to recommend proper methods and equipment for performing these functions in the most effective manner.

Cutler-Hammer Plant in West

Cutler-Hammer, Inc., pioneer manufacturers of electric control apparatus, Milwaukee, Wis., announce the extension of their manufacturing facilities to the West Coast. A new plant, at 970 Folsom St., San Francisco, Calif., began operations this month. Other factories are located in New York City and Milwaukee.

The Marietta Paint & Color Co. Secures Services of B. E. Culver

B. E. Culver, a man with wide experience in the industrial wood-finishing field and formerly in charge of finishing departments of some of the leading furniture plants in Indiana, Michigan, and Ontario, Canada, has been placed in charge of sales service work, in cooperation with salesmen of The Marietta Paint & Color Co., operating out of the High Point, North Carolina, plant.

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FINISHING MODERN *Radio Cabinets—I*

by W. T. Smith

ABOUT TEN YEARS AGO when the squalling infant, radio, made its debut before a cynical public as a mass production industry, it was encased in a sort of box to keep dust and inquisitive fingers out of the condensers, and its creators called it good. Its startling inroads on the woodworking industry since then, to a point where some 4,000,000 odd cabinets are produced annually, is a matter of common knowledge.

Today there is a concentrated effort on the part of all manufacturers to make the radio cabinet a piece of furniture—an effort attended by a fair degree of success — hindered somewhat by the thing's consistent refusal to look like anything but a radio cabinet. Persistently recurring efforts on the part of designers to disguise it as a clock, table, or bookcase are received with restraint by a public that evidently prefers its radios straight. Perforce, therefore, a new thought in design is in vogue, producing a line of instruments which bid fair to become as well individualized as pianos.

Beginning with the "lowboy" and "highboy," and progressing through the Chinese Chippendale and Renaissance court cupboard to the 6-legged console, the typical radio cabinet has descended to the floor and promises to remain there for the time being at least. Carvings, fluting, reeding, and elaborate turnings are disappearing in favor of the severe Modern motif, with its round corners and startling angles, to an extent perhaps which carries the radio cabinet beyond conventional furniture designs. The time may even be approaching when the radio will lead rather than follow other items of home furnishings in design.

By this time practically all manufacturers of radio cabinets have reached the realization that

Material for this interesting article is based on the author's personal experience and contact with the methods and processes used in the finishing departments of several leading manufacturers of radio cabinets . . . covering a period of more than ten years.

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"SPRAY alarm system bells—thin enough to maintain true sound"

"DIPPING hammer heads"

"spraying truck frames"

"BRUSH two coats on zoo cages"

"BAKED on U. S. Army chairs"

"AUTOMATIC SPRAY on overhead door equipment"

"on lanterns, oil cans"

"WOOD and STEEL card table leg

"AIR DRY spray on the back of Radiant Heaters"

"for backing of WOOD and METAL sig

"coat castings that AGE IN WEATHER one year"

"dip metal parts of shovels"

"PROTECTIVE PAINT for steel floor boards"

"dipping seat frames of subway car

"use on motor parts because of its resistance to gasolines, oils, and greases"

"spraying fishing rods"

"backs of gas heaters and floor registers"

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DUM DUMS—ARCO AUTOMOTIVE LACQUER AND SYNITE

their product is a highly specialized article, the processing of which cannot be successfully conducted along the lines of bedroom or dining room furniture or pianos or any other apparently similar line.

Perhaps 90% of the radio cabinets produced are manufactured by contractors. The cabinets are held to a high standard of uniformity and quality, built to rigid specifications on a large volume basis and on a narrow margin of cost. Obviously it is necessary that specialized equipment, specially trained personnel and carefully organized shops are essential to successful operation on radio cabinets—facts which many a small furniture manufacturer has learned to his sorrow.

Cabinet Woods Used

The radio cabinet has run the gamut of cabinet woods from rosewood to tupelo, but it returns with faithful regularity to the old standby, American walnut. Every year practically every manufacturer shows at least one model in mahogany; a few have enjoyed a considerable run but they have never been generally accepted. Maple, despite its wide popularity in other furniture, has but a limited appeal. The sporadic out-cropping of burls, novelty exotic woods, mirror and chromium effects are sensational experiments which will not be discussed here.

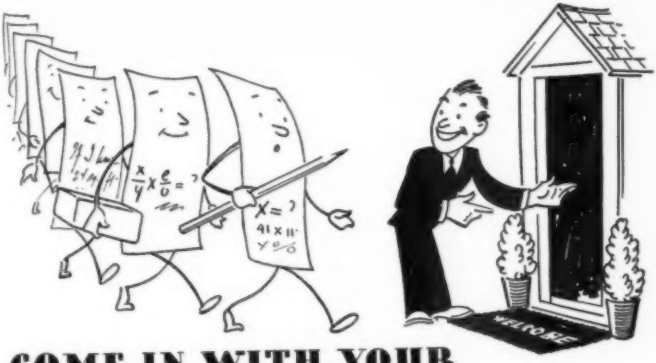
The walnut finish which dominates the industry is applied to gum, walnut, birch, tupelo, or maple—probably placing in volume in about the order named.

All paneling and other flat surfaces are veneered in 3-ply or 5-ply, the core generally being yellow poplar, tulip poplar or sap gum—since the pretty general exhaustion of chestnut. Probably 60% of the cabinet manufacturers purchase their panel stock, the remainder manufacturing their own. What pioneering has been done in late years in the matter of veneer glues may probably be laid at the door of radio manufacturers, the latest of which is the phenolic resin sheet type which is cut to size, placed between the parts to be joined and set in a hot press.

Fancy Veneers and Other Ornamentation

Selection of fancy veneers for inlays, overlays, instrument panels, etc., is governed, not only by cost and suitability, but by availability in quantity, since a design involving such decoration may be applied to tens or even hundreds of thousands of cabinets. Walnut butts and burls lead for decoration, followed by some mahogany crotch and by a heterogenous array of Sequoia burl, olive ash, zebra, birdseye maple, Carpathian elm, Java teak, faux satine (cypress), quartered sycamore, satinwood, East Indian and Brazilian rosewood, East Indian laurel, Alpine burl and harewood. Oriental walnut, an Australian importation, has gained a great impetus in the past year for general face veneer use, its buff color and ripple stripe figure finishing to a very pleasing effect. Black inlays are usually made of dyed pearwood, although some genuine ebony is used. White inlays are made of maple, holly and boxwood. On modern designs, metal is used to some extent.

Molded or pressed plywood and wood fiber cabinets or parts have



COME IN WITH YOUR *Surface Problems*

IF IN THE finishing or refinishing of a product no difficulty was ever encountered, most anyone could go into the lacquer business and make a success of it. But, unfortunately, there are often problems to be solved . . . Very frequently the knowledge that comes only with years of experience is required before a satisfactory formula can be worked out for a particular use . . . In this respect Egyptian holds somewhat of an advantage by reason of its experience in the manufacture of lacquer products dating back over a half century.

While we do not claim that we can solve every problem that is presented, we can assure you that our experience will be of tremendous assistance to you and that you will at least know whether or not "it can be done".

When you are next in the market for lacquer finishes won't you give us an opportunity of discussing your requirements with you?

EGYPTIAN · LACQUER

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seen considerable use in the past, but are apparently on the wane. The use of transfers (decalcomania or gelatin roll or related systems) for reproduction of figure on low-priced or non-figured woods has not gained wide popularity in radio work. Molded plastics make a persistent bid for small cabinets—and are used to some extent on the very small types—but they have not yet obtained wide usage, especially on the leading standard makes. Their use for control knobs and bezels is wide, although many of the latter are metal, and last year showed a strong return to the genuine wood (walnut) knob.

The past year has shown a wide and commendable return to genuine walnut veneers and the majority of even the small types now show very little gum or tupelo on walnut cabinets.

The use of carvings has declined with the advance of Modern, but that which still appears is usually of the pressed or molded imitation type — lamentably, since they are difficult to finish and are apparent for what they are even to the layman.

As a prelude to a discussion of the actual finishing processes, let us consider the factors which are prominently peculiar to the industry and which form the major problems in operating on radio cabinet finishing.

Uniformity of Appearance Economy in Production

The two great watchwords in radio cabinet finishing are "uniformity" and "economy." In consideration of the former, leading manufacturers insist for some reason that all cabinets of one model or design be as exactly alike as peas. Here the problem of finishing on sap and red gum, tupelo, plain and burl walnut in one unit, with a minimum of operations, will be apparent to any finisher. The economy factor involves not only a minimum of material, which is secondary, but primarily of drying space and manual operations. The reason for the breakneck speed, and sometimes ridiculously accelerated operations, may be more apparent when it is stated that only a few years ago drying space in the cabinet factory of a large manufacturer was inventoried at $11 a square foot per day.

Part II of this article, to appear next month, takes up "Staining."

Cleaning Before Rust-Proofing

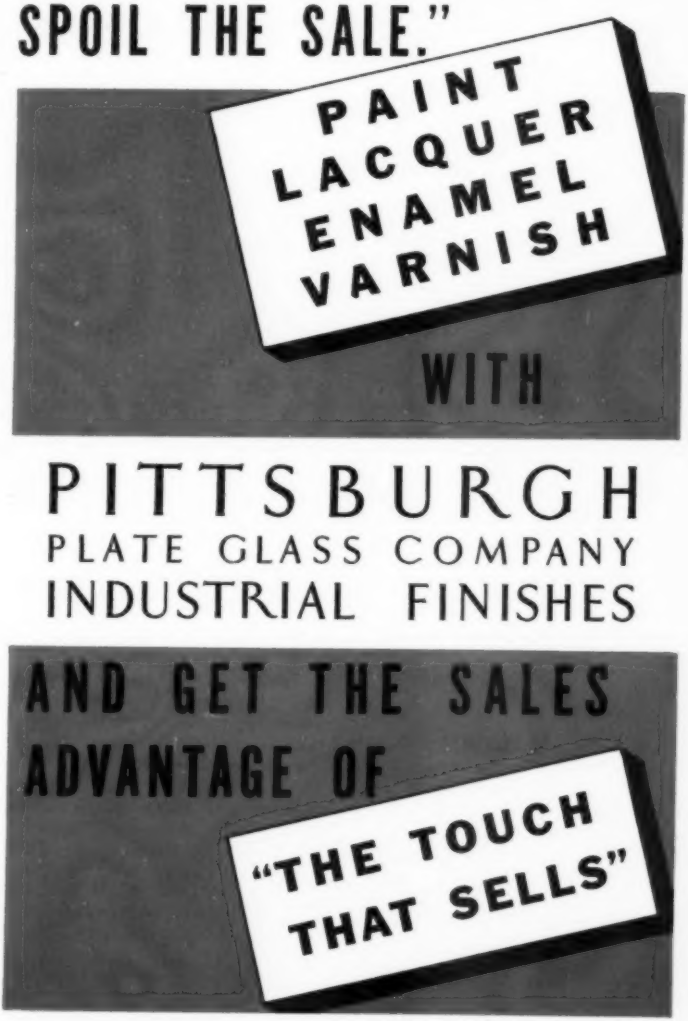
The advantages of speed, economy, and most satisfactory cleaning before all kinds of rust-proofing and finishing operations are obtained by the Detrex method of Solvent Degreasing, it is pointed out in a leaflet being distributed by Detroit Rex Products Co., 13005 Hillview Ave., Detroit, Mich. This leaflet is illustrated with several photographs of automatic Detrex Degreasers for the production cleaning of metal products by the use of either Perm-A-Clor or Triad Safety Solvents.

Mr. F. Carroll Goldsborough, U. S. I. Sales Manager, Dies

F. C. Goldsborough, Eastern Sales Manager for U. S. Industrial Alcohol Co., New York, since July, 1933, died on September 22nd, at his home in Plainfield, N. J., after a prolonged illness induced by pneumonia. Mr. Goldsborough, who was in his fifty-first year, was buried at Easton, Md.

Prior to joining U. S. I., Mr. Goldsborough was sales manager for the American Solvent and Chemical Corporation, from the formation of that company in 1927 until 1933, when it was acquired by the Commercial Solvents Corporation.

Mr. Goldsborough is survived by his wife, Alice and his son, Carroll.


"SPARE THE FINISH AND SPOIL THE SALE."
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INDUSTRIAL FINISHES
AND GET THE SALES ADVANTAGE OF
"THE TOUCH THAT SELLS"

Air-Conditioning Our Finishing Room

by C. L. Nagel

Here is an interesting practical approach to the complete air-conditioning of a finishing room, starting out with the idea of cleaning the air of dust and dirt to avoid specks on the finish; removing excessive moisture to prevent blushing or the slowing up of drying; heating the air to suitable temperature (during winter) to speed up drying; circulating the air to further promote drying and to secure good ventilation—and finally calling in experts to plan the installation of complete equipment for maintaining this close control of inside air conditions at all times.

WE MODERN North Americans grab onto things and words that suit us and wear them to a frazzle. A good example, generally much overworked and not understood, is "air-conditioning."

Some gadget makers would let us think that air-conditioning is what we get when we hook an air dampener and a blower onto a hot-air furnace. But the Federal Trade Commission and the Better Business Bureau tip us off that real complete air-conditioning includes all of the following functions: Circulates, heats and humidifies the air in winter; in summer, circulates, cools and dehumidifies. This is in all cases the minimum for what may be truly called air-conditioning.

Just which of these features are most desirable in our industrial paint shop or finishing room? And what benefits do they bring? The answers depend upon several things: Our local climate; the finishes we put on; and the intensity of the rush of our production program.

Summer Time; Dust

As pointed out above, the changing seasons present air-conditioning problems that likewise change. Let us consider the summer time. Looking first at the dry-glossy jobs—the coach, gloss, flowing and finishing varnishes, both oleo-resinous and "synthetic"; the clear japans; the gloss enamels. These shiny surfaces show plainly every little flaw, every irregularity of line and plane and curve, every blemish. Especially is this true of the unpigmented finishes and, most of all,

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GLIDDEN for REAL Cooperation!"

For years, I rassled around with all the problems you're up against. Then I broke loose. Decided I was going to give myself and the plant a square deal, by lining up with a real industrial finishing service house.

I made up my mind that an outfit as big as Glidden ought to have just about what I wanted. One day I had the Glidden man give me the whole story. And what an eye-opener it was!

Glidden has an absolutely dependable laboratory and technical service, available for your needs at all times. The Glidden line represents the highest quality standards in the world. Glidden's reputation in every branch of the finishing industry has reached its high standards because of unfailing service in every emergency.

Glidden can meet your requirements 100% in fine materials and expertness of advice in finishing problems. All you have to do is tell them you're interested. Write today!

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Varnishes
Everywhere on Everything
Lacquers
Enamels

of the black japans. Elsewhere a speck of dust may be just a speck, but here it becomes at once a defect, an eyesore, a value depreciator, a sale killer.

This fight against dust! Every finisher knows what a battle it is. Sometimes he must adopt makeshifts and expedients in order to win. But it can become an easy and certain victory. Visit any modern clean-air shop and the answer is obvious: Suitable equipment.

An important part of this equipment is the air filter. It is helpful not only in the summer season, which we are now considering, but in the winter too. Hence, in with the filter and out with the dust.

High Humidity; Temperatures

High humidity is usually a summer trouble. In some locations it may be a rainy season bother; in others, an all-year-'round vexation, causing lacquer to blush and varnish to dry poorly. The remedy indicated depends upon the frequency and duration of the dampness.

If it happens just once in a while and for only a day or so at a time, it may be possible to shut down the shop 'till tomorrow. But this simple solution is not always feasible, as the finishing department is usually the last to work on the product and is under the pressure of the accumulated delays of all the other departments. And to carry an inventory of finished goods merely to anticipate infrequent muggy days is usually considered impractical.

The oftener these humid days happen, the greater our urge to find an antidote. How about taking out of the air some of its excess moisture? This dehumidifying operation can be done and is being done. If there is an abundant supply of cheap cold water available, a surface condenser inserted in a blower system offers a solution—and is indeed a lucky break for us, as the alternative, a mechanical refrigerating device, runs into more money; more money to install and more to operate.

Instead of taking moisture out of the air we can produce a similar effect merely by heating the air. The actual moisture content, the absolute humidity, remains unchanged, of course, but the relative humidity is lessened. Hence we get better drying of oxidizing varnishes and enamels and lacquers. And in nearly every case this is the simplest and cheapest remedy—if the shop is not too hot to begin with.

If the paintshop is already around 90°F., we cannot well make it hotter; but we can run up the temperature in the enclosure where the coated articles are put to dry. This temperature increase may range from a small increment, in a mildly warmed drying room for wood finishes, up to a boost to 200°F. or more in an insulated oven.

Just how much we need to raise the temperature in order to secure a good drying condition depends upon several factors: Initial temperature, initial humidity, air velocity, and desired relative humidity. When we have determined how high we must boost the heat in order to have a satisfactory drying condition, we may decide to add still more heat and thus accomplish the drying in a still shorter time. The

advantage is tempting for, in general (leaving out the common lacquers), the higher the temperature at which a finish is dried, the tougher the coat produced. And a switch from air-drying to baking finishes often gives us a saving in price.

In Winter; Artificial Heat

Looking now at the picture labeled, "Winter." Artificial heat; paint jobs drying on time; no air troubles, except dust.

Where spraying is done the dust nuisance is aggravated by exhaust fans in the spray booths. The air they push out at such a rapid rate must be replaced by air entering the shop at the same rate. Hence it rushes in wherever it can. If the paintshop is a part of a larger plant it may be that dirt-laden air from fabricating operations pours in at a rate that makes clean work impossible. The remedy is to supply clean air direct to the finishing department; and at a rate that is ample to maintain an atmospheric pressure slightly greater than barometric. Thus when doors are opened dust cannot enter.

The selection of the type of filter to be put in should follow a study of all pertaining conditions and factors; and the incorporation into the system of an automatically-controlled humidifier completes the installation.

Having done this for the sake of better paint jobs we soon find that we have an extra measure benefit; for correcting the dryness of the heated air has improved the health of the workers: Fewer colds, coughs and layoffs.

And now that we have an idea how our problem classifies, let us call in the experts: Our paint firm's industrial technical representative; and the equipment engineer. They are in position to offer us intelligent help to obtain the advantages that real air-conditioning offers.

Patina Walnut; Pilgrim Maple

Patina Walnut and Pilgrim Maple are two new and attractive colors recently developed by V. J. Dolan & Co., Inc., Chicago, Ill. Mr. Dolan explains that Patina Walnut is a reproduction of an old Italian finish and produces a mellowed antique effect on maple, birch, gum or walnut.

Pilgrim Maple is something apart from the regular reddish cast and tends toward a soft neutral brown.

Substitute Wood Panels

A substitute for wood panels for use in houses, ship cabins and in the making of furniture is now being introduced in France by the Isorel Co., according to the Paris office of the du Pont Company. The substitute consists of a panel made of compressed wood fiber by a special process and dried slowly in hot air.

Natural wood paneling, in that country at least, has fallen off in usage because of the high price and the difficulty of obtaining sufficiently seasoned wood. The panels, when applied to walls, are said not to warp. If it is desired to obtain a natural wood effect, the panels can be veneered or grained in imitation of any wood by means of the photographic and copper-plate process. When this is done the panels do not show knots or defects of any kind. The panels are then sprayed with clear cellulose varnish.

In order to obtain color effects, most of the panels now in use have received an application of either lacquer enamel or synthetic enamel. When coated with asphalt or other suitable materials, they can be used for outdoor purposes and, it is said, can be submitted to great exposure.

Owing to their insulating and sound-abating properties, these synthetic wood panels are said to be used extensively for rooms, office walls, and also for ship cabins. They are also used in the manufacture of furniture. They are said to come in even quality and appearance, and, in consequence, there is practically no waste.—DuPont Publicity Dept.

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● At last manufacturers everywhere can finish *any* product in a wide variety of two-tone effects—at spectacular savings!

Multiform Finish, revolutionary new product of Berry Brothers, produces a wide range of surfaces in different designs and color combinations. All are easily adapted to wood, paper, metal or Masonite surfaces without the use of special equipment.

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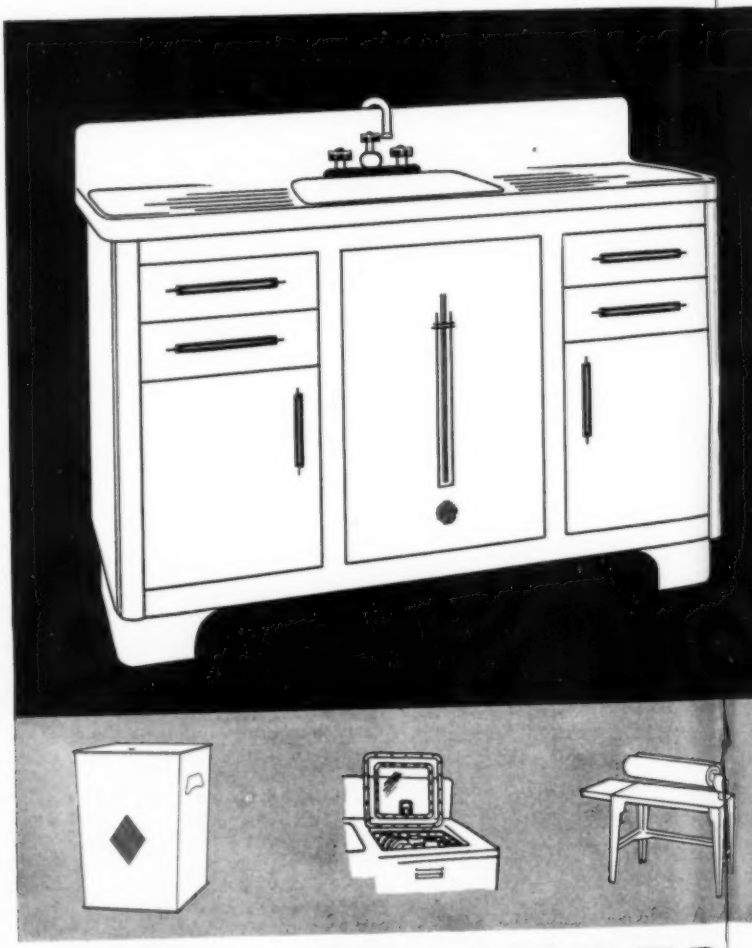
A FINISH OF LASTING BEAUT



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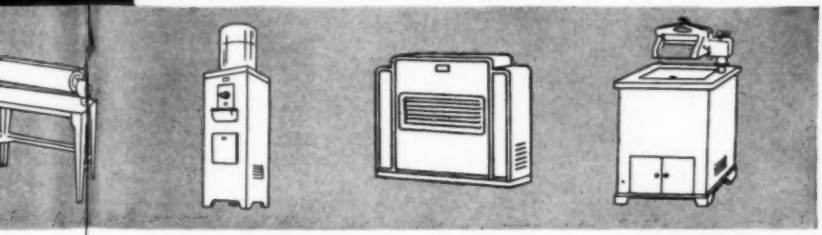
A GLEAMING, beautiful finish for an almost endless variety of metal articles. A finish of extraordinary durability . . . so smooth and hard and tough that it actually sheds dirt, resists chipping and cracking, keeps its original brilliant lustre even under the constant wear and tear of daily household service.

That's Du Pont High-Bake DULUX . . . one of the greatest triumphs of modern chemical science.

Ever since its introduction, DULUX has enjoyed a sensational success. It has set completely new standards for beauty and durability. It has *proved* its greatly superior qualities on products such as sink cabinets, radiator enclosures, recording instruments, kitchen and bathroom cabinets. A typical example of how DULUX has proved itself lies in the fact that today more than 3,000,000 refrigerators are finished with DULUX.

DULUX adds a definite plus value to any metal product . . . in a finish that gives articles greater beauty and durability, and a finish that gives customers more for their money.

For more detailed information, write to E. I. du Pont de Nemours & Co., Inc., Finishes Division, Wilmington, Delaware. In Canada: Canadian Industries, Ltd., West Toronto 9, Canada. In Great Britain: Nobel Chemical Finishes, Ltd., Nobel House, Buckingham Gate, London S. W. 1, England.



ED FINISHES

DU PONT

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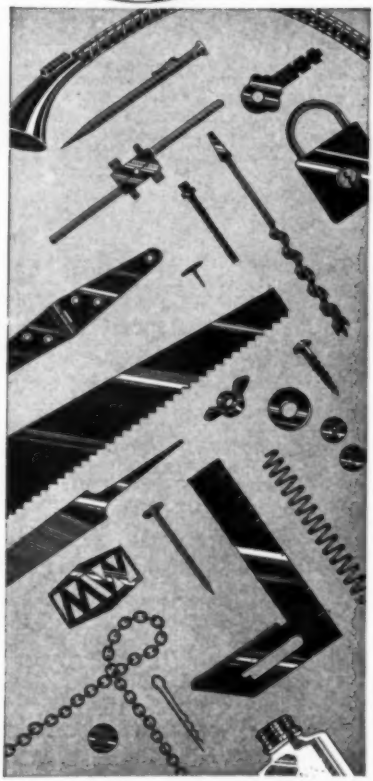
the JETAL process

a simple way

to BLACKEN

Iron and Steel



THE Jetal process colors iron and steel products at low temperature, by immersion, to a uniform and brilliant black. It is a complete finish in itself and will not chip, scale, peel or discolor. It replaces more involved and expensive black finishes and forms an excellent bond for subsequent finishes such as japan, lacquers, varnishes, enamels, etc., that require high temperatures.

Ask for descriptive circular and send samples to be JETALized.

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» » Cleaning and Finishing

Pressed Metal Products

by Michael Forchione
Assistant Finishing Foreman
Berger Manufacturing Company

IN THE MANUFACTURE of products made of pressed-to-shape sheet metal—for example, such products as steel partitions, metal-covered doors and trim, metal office furniture, metal shelving and bins, etc., the first step toward finishing is to clean the surfaces thoroughly. We use naphtha tanks, constructed in such a manner that they have a sliding top that can be quickly closed in case of fire.

Metal products and parts to be cleaned are dipped into the naphtha and then allowed to drain, after which they are wiped dry with clean rags and inspected for rust or any other defects. Any items that have flanges or "hard-to-get-at" places are then placed in an oven and baked or "burned-off" to make sure that no naphtha or grease remains on the surface to later cause flaking off or peeling of the finish at these points.

Once the products are thoroughly cleaned, they are ready for the first coat of finishing material—to be applied either by dipping or spraying. Many of our products get only a one-coat finish—a baked finish, baked for 1½ hours at 250°F. Filing cases and metal furniture items that require a 2-coat or 3-coat finish are moved directly from the metal-cleaning department to the fillers.

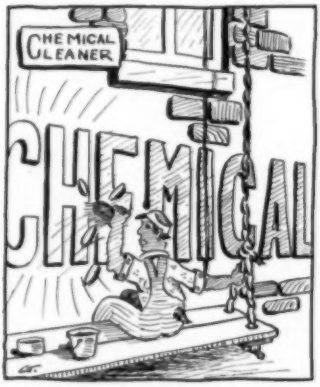
The fillers carefully re-inspect the pieces and fill all depressions, scratches or any other defects that may be present in the sheet metal. The filler is "knifed on" as we call it; that is it is pressed into place with a putty knife. The filler is then baked. Afterward the filled surfaces are carefully sanded smooth. These products (filled and smoothly sanded) are now ready for the prime coat which is generally sprayed on and then baked. The primed surface, in turn, is smoothly sanded and again coated with an intermediate or final finish. After careful inspection of the final finish, the work is sent to the crating-shipping department.

Products to be grained in imitation of oak, mahogany, walnut or some other attractively figured wood are filled, primed, (each operation being followed by baking and sanding smooth) and given a ground color coat. Then the surfaces are smoothly sanded and wiped clean in preparation for graining.

In the graining department we have copper panels or graining

plates which are etched to faithfully reproduce mahogany, oak, walnut, etc., so that any of these woods can be skillfully imitated by a mechanical production process. Graining inks of suitable color for the various woods are available. In actual operation, a supply of graining ink is flowed over the copper plate and then carefully scraped off with a spring-steel scraper, leaving only a thin film of color in the etched portions of the copper panel. This film (in an etched design) is then picked up completely with a clean soft composition rubber roll which the workmen roll slowly over the inked copper plate. Workmen lift the inked roll off the copper plate and roll it over the ground-color-coated metal surfaces that are to be grained. The graining ink is deposited in a pattern that accurately duplicates the grain of wood to be reproduced.

Freshly-grained metal parts are placed in an oven and baked for one hour at 225°F. When they leave the oven and are cool, they are moved to the lacquer room, rubbed with upholsterer's hair to knock off any dirt which may have been picked up, then wiped clean, and finally sprayed with a clear air-drying lacquer. Following this operation the finished parts are again inspected and, if found satisfactory, are promptly transferred to the assembly room where the hardware is fitted on; then the products are ready for the crating-shipping department.



Sherwin-Williams Promotes Three

Announcement made Wednesday from the Executive Offices of The Sherwin-Williams Co., world's largest paint and varnish manufacturers, Midland Bldg., Cleveland, Ohio, covers three major promotions affecting H. D. Whittlesey, A. W. Steudel and K. H. Wood. President George A. Martin issued the following bulletin:

"For progress and the further development of this company's interests, the following changes in organization become effective as of October 1, 1936:

"First Vice President and Director of Sales and Distribution, Mr. H. D. Whittlesey, will be relieved of the duties of Director of Sales and Distribution, and will devote his entire time to executive duties and to the further interests of our allied connections.

"Vice President, Mr. A. W. Steudel, becomes Vice President and General Manager of The Sherwin-Williams Company.

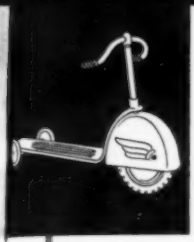
"Mr. K. H. Wood becomes Director of Sales and Distribution.

Mr. Whittlesey has served the company nearly 50 years. He spent 17 years in charge of the Eastern business at Newark, N. J., and came back to Cleveland in 1918 in charge of all sales.

Mr. Steudel has wide experience in practically all the operating and executive branches of the business, particularly in industrial sales, dyes, chemicals, pigments and colors.

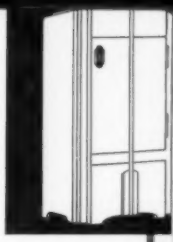
Mr. Wood has had territorial and division sales experience and for several years has been in charge of railway and marine sales.

The changes are in line with the company's policy of advancing the younger men who have proved themselves to positions of greater responsibility; thus enabling Mr. Martin and Mr. Whittlesey to devote their time to purely executive and organization matters and policies.



R-M

REG. U.S. PAT. OFFICE



Industrial FINISHES

R-M Industrial Finishes are being favored in many of the leading diversified classifications such as refrigerators, washing machines, toys, tractors, office appliances, metal furniture, and electrical equipment. ★ Modern finishing engineering service and counsel available and gladly extended. We will be pleased to analyze your painting problems and make recommendations without obligation to you.

RINSHED-MASON COMPANY

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5935-5971 Milford Avenue
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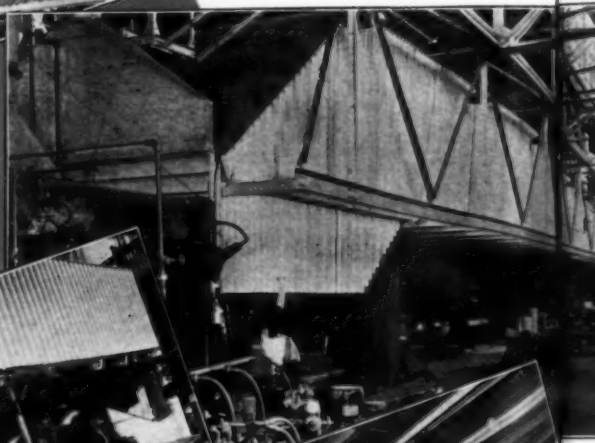
. . . Engineered to

Requirements of

Above—High Temperature Baking Ovens designed and built by Mahon for a Refrigerator Manufacturer. Right—A large convection type Drying Oven designed and built by Mahon for General Motors Truck Plant.



Drying Ovens designed and installed by Mahon for Budd Wheel Company.

Large Drying Oven designed and installed by Mahon for Briggs Manufacturing Co.

al OVENS

eered *to meet the Exacting Production*
ents *of the Individual Manufacturer.*

Oven engineering is becoming more and more important in industry every day. Modern production methods demand close coordination of every operation throughout the entire production system. Ovens are part of the production equipment which must function efficiently and economically. That is why so many manufacturers are turning to Mahon engineers for the solution of production problems involving ovens of any type . . . they know that Mahon engineers are specialists whose widely diversified experience and thorough knowledge of present day production methods, gained through years of close contact with production experts in every industry, fits them to render a better engineering service in the solution of any oven problem. Whether you are contemplating oven equipment for Drying, Baking, Tempering or Processing, you need the recommendations of Mahon Oven specialists . . . consultation with Mahon Oven Engineers will not place you under any obligation — inquiries are solicited.

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Designers and Manufacturers of High and Low Temperature Ovens for every purpose—Metal Cleaning Machines—Rust Proofing Machines—Spray Booths and many other units of special production equipment.

What's New « «

Solvent Degreasing Machine

A new 2-dip solvent degreasing machine, designated as size 624, has recently been added to the line of Detrex Degreasers manufactured by Detroit Rex Products Co., 13005 Hillview Ave., Detroit, Mich.

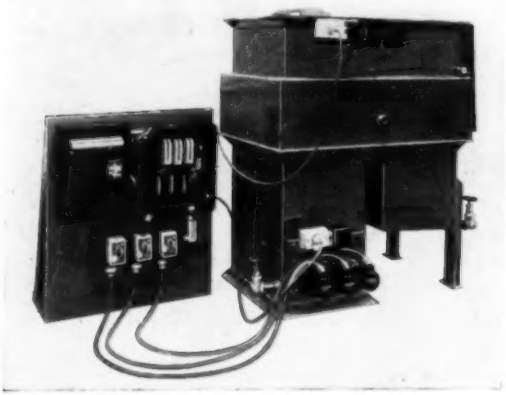
Among the important features of this machine are a water jacket type of condenser completely encircling the machine, and a solvent condensate collecting trough located beneath the condenser. By this arrangement of the condenser and condensate collecting trough, solvent vapors are held within the machine and all of the pure solvent distillate is emptied directly into the second or rinse chamber, thus continuously renewing the rinse chamber with pure solvent.

With this type of degreasing machine, the work is usually handled manually in baskets or on racks. For convenience, especially when comparatively heavy loads are cleaned, a small hoist may be employed.

This machine is used for both immersion and vapor cleaning. The usual sequence of operation is to immerse the work in the boiling chamber, cool it in the clean solvent rinse, and finally suspend it for a few seconds in the pure solvent vapors over the boiling chamber. The work is removed clean and dry. This complete cycle of cleaning operations is accomplished in less than a minute, yet every trace of oil and grease is removed.

Either "Perm-A-Clor" or "Triad," stabilized chlorinated solvent is used in Detrex Degreasers. These solvents are non-inflammable and non-explosive, and have a solubility factor for oils and greases more than four times that of ordinary organic solvents. The solvents are used over and over with but slight maintenance.

Contamination resulting from the cleaning operation is removed from the solvent by periodic distillation within the machine. To facilitate this cleaning operation, there is an



New design of Detrex degreasing machine for the cleaning of metal parts preparatory to finishing.

When a Boy Starts Brushing His Hair!

It usually happens in the early 'teens . . . the hair brush is given frequent work-outs and dolling-up becomes a serious matter . . . Junior becomes conscious of the fact that appearances do count if he is to be accepted as Susie's choice.

It's the "finish" that puts over the sale for Junior . . . and it's the "finish" that puts over the sale for most things whether it is Susie's steady or your commercial products. Appearances are as important in establishing acceptance for products as they are in affairs of the heart.

Perhaps some of your products could stand a bit of brushing up . . . and most certainly you would like to see a sharper upward curve on your sales chart . . . so why not let our creative studio work out a better finish for one or more of your products and demonstrate what can be done to make them more saleworthy.

There is no charge to reputable concerns for this service.

Rockford Varnish Co.

ROCKFORD, ILLINOIS

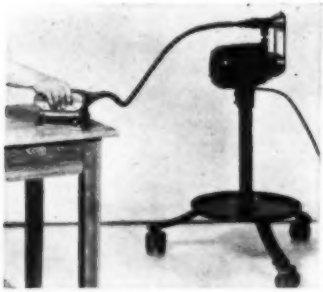
outlet from the solvent trough at one end.

The unit shown in the accompanying illustration is arranged for electric heating, using three immersion-type heaters. It is equipped with both top and bottom thermostats (expanded metal guard has been removed from top thermostat to show construction). The relay and switch equipment can either be placed on side of degreaser or mounted on a separate panel as shown. These Detrex Degreasers are also designed for steam or gas heating.

Portable Electric Sander Reciprocating Action

For many years the desirability of an electric sanding and rubbing machine of reciprocating action has been apparent. After three years of experimental work and practical tests in a number of industrial plants, the Sterling Products Co., Detroit, Mich., claims to have developed a real achievement in an electric machine of this type.

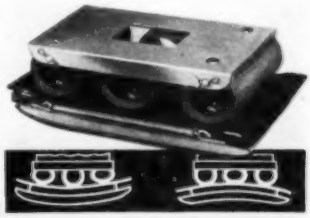
The machine is driven by electric motor through a flexible shaft. It is not intended to replace the air-driven model manufactured by this company, but is added as a companion to the air machine, which in less than two years has become quite popular in many different industries.



Power is transmitted from the motor to the machine through a flexible shaft.

Sanding action is reciprocal, with ⅝-in. travel of the sanding pad, at speeds from 1,750 to 2,800 complete oscillations per minute, depending upon the type of work to be performed. This movement duplicates the natural back-and-forth motion of hand sanding and rubbing.

The principle of "floating," as applied to the construction of the



Floating principle allows operator to sand curved surfaces easily and effectively.

block, is an exclusive patented feature. Flexible rollers of special composition rubber and fabric are attached floatingly by pins to the sander block; in addition special pads varying in flexibility are available. Due to this construction feature, there is no restriction in the movement of the block. The machine is applicable to curved and flat surfaces of metal, wood, composition, leather and marble—for such delicate operations as the finishing of stringed musical instruments, to the heavier production requirements of finishing machine tools and automobile bodies.

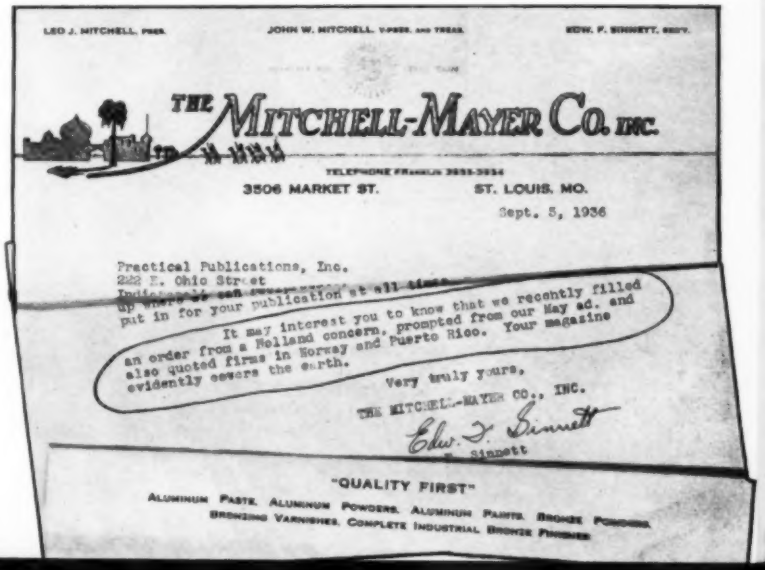
Both wet and dry sanding are possible, as a water connection is provided with a series of openings on each side of the block, providing a spray that is readily adjustable to the job requirement. For gas sanding with naphtha, gasoline or benzine, a special block with sterlite base is provided.

From one to five sheets of abrasive may be attached to the pad at one loading. Ordinary size sheets are cut into three pieces without any wastage of material.

Thanks...

to our readers

To you heads of product-finishing departments, you production superintendents, company officials, chemists and product designers . . . we want you to know that the consideration given advertisers in INDUSTRIAL FINISHING magazine is greatly appreciated by its publishers. Frequently, we are told just how your interest manifests itself in the form of inquiries and actual orders. We point to The Mitchell-Mayer Co. comment in this connection, as herewith reproduced. Again, THANKS!



LEO J. MITCHELL, PRES. JOHN W. MITCHELL, V-PRES. AND TREAS. EDW. F. SINNETT, SEC'Y.

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Sept. 8, 1936

Practical Publications, Inc.
222 E. Ohio Street

put in for your publication at all times.

It may interest you to know that we recently filled an order from a Holland concern, prompted from our May ad. and also quoted firms in Norway and Puerto Rico. Your magazine evidently covers the earth.

Very truly yours,

THE MITCHELL-MAYER CO., INC.

Edw. F. Sinnett

Edw. F. Sinnett

"QUALITY FIRST"

ALUMINUM PASTE. ALUMINUM POWDERS. ALUMINUM PAINTS. BRONZE POWDERS. BRONZING VARNISHES. COMPLETE INDUSTRIAL BRONZE FINISHES

The machine is portable and may be operated from any electric outlet, either 110-volt or 220-volt.

Three different types of mountings are provided: A bench plate type, with motor mounted on a metal plate for use on the work bench; the ceiling suspended type, where the motor is suspended by means of bale type handles (for use where floor space is limited); and a bench-height pedestal model, with 3-leg caster base.

Frequent oiling is not required, as sufficient grease is contained for one to six months' operation.

Perfect balance of the sander head and the light weight of 7½-lbs., plus the compact dimensions of 7-in. long by 4⅝-in. high and 3¾-in. wide, provide a comfortable fit to the palm of a workman's hand, besides making the machine extremely responsive to the guidance of the operator in any position.

"Hydro-Degreaser"

Developed for removing heavy accumulations of oil and grease from airplane engines and parts, the "Hydro-Degreaser" has been found particularly adapted for economical operation in large industrial plants. It has no toxic vapors and requires no heat or steam for its use. The "Gunk" solvent compound used as the cleaning medium has a powerful affinity for waxes and buffing compounds and will remove the last trace of them without injury to aluminum, magnesium, or other soft metals.

Oil-coated and greasy metal parts may be effectively degreased by cold immersion in a "Gunk" solution contained in one compartment of the "Hydro-Degreaser." After soaking for a few minutes, the parts are then removed from the "Gunk" bath to a rinse section where they are sluiced off with a water hose, which quickly emulsifies the treated grease, leaving a perfectly clean, dry surface without oily film.

If necessary, air line agitation is used to create turbulence of the solvent bath. This reduces the time necessary for emulsion to only a minute or two.

The rinse section is connected directly to the sewer drain and carries off the dissolved oils and greases in a safe emulsion form, the tank being self-cleaning and the process continuous.

The cleaning solution has the safety feature of being non-corrosive to the skin. In respect to fire hazard, the solution is rated as a safety solvent by the Underwriters Laboratories. Users report that the solution lasts indefinitely, and that the only additions necessary are made to cover the "drag out" loss. A sludge sediment valve keeps the bath clean at all times.

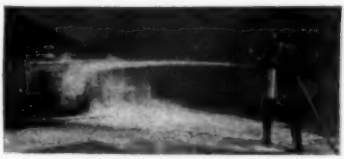
It is said that the solution is unusually successful in cleaning aluminum castings and other soft metals of buffing compounds and waxes.

Free plans for the construction of the "Hydro-Degreaser" cold immersion cleaning tank may be obtained from the Curran Corp., Malden, Mass., manufacturers of "Gunk."

Puts Out Fires

An entirely new method, mechanical rather than chemical, of making foam for fighting flammable liquid fires, and suitable for use with long or short lines of ¾ to 2½-in. hose, has been announced by the Pyrene Mfg. Co. Newark, N. J.

A water stream is converted into a continuous foam stream by coupling a unique patented nozzle, known as



Using the foam-making apparatus.

"Red Hot—the Finish Holds On"

HILUME

Heat Resisting Vehicle for Use with Aluminum Powder

The aluminum finish made with this vehicle reaches a new high in heat resistance. It hangs on the surface even if it becomes red hot.

This extreme heat resistance makes Hilume an ideal aluminum vehicle for use on boiler fronts, auto exhaust manifolds, hot water heaters, radiators, pipeless furnaces, steam lines, electric light reflectors, airplane motor cylinder heads, oil burners and other surfaces which are subject to unusually high heat.

Send for a sample of Hilume Heat Resisting Vehicle, with aluminum powder added for your convenience, and make this test:

> *Pour some of the mix on a metal plate, let dry for 10 minutes or a day. Hold it over a flame until it becomes red hot, then let it cool and see how the finish is unaffected —no signs of flaking or peeling.*

A sample of Hilume (mixed) is free, any size you need for test—will you try it?

HILO VARNISH CORPORATION

HILO

73 Years Experience in "Better-The-Finish"
42-60 Stewart Ave. Brooklyn, N. Y.
Chicago — — Boston — — Philadelphia

Varnishes Enamels Japans Lacquers

the Phomaire Play Pipe, to a water line supplying 75-lbs. or more pressure at the play pipe. As the water passes through the play pipe, Phomaide (a new foam-making solution carried by the operator in a hip pack) and air are automatically drawn into the water stream in the proper proportions to form foam. There are no complicated preliminaries, no confusing adjustments, no moving parts. Only one person is required at the play pipe.

Water may be pumped from suction, hydrant or water tank. Only about 20 gallons of water per minute are required, making it practical wherever the water supply is limited, or for use with booster tank and booster pump.

One gallon of Phomaide solution makes 350 gallons of foam. Foam production of 300 to 400 gallons per minute may be continued indefinitely by merely pouring additional solution into the hip pack.

In addition to the foam stream for fighting flammable liquid fires, a water stream for extinguishing any lingering fire in ordinary combustibles may be discharged by simply lifting the pick-up tube out of the solution. When it is again dropped into the solution a foam stream is produced.

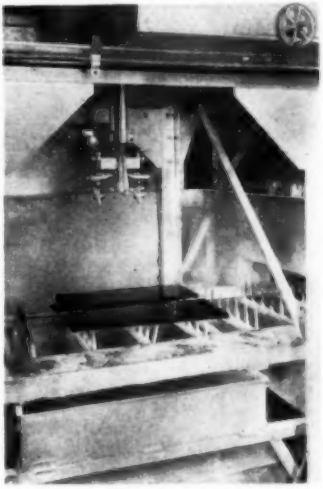
Bonding Resin for Veneers and Plywood

A new synthetic resin, especially developed to replace certain types of glues in the production of superior grades of plywood and other laminated products, is announced by the American Catalin Corporation, One Park Ave., New York, N. Y. This material, termed "Catabond" is practically colorless and can be used as a bonding material between the different plies as well as a surface coating. Both operations are performed at the same time during the hot pressing of the plywood or veneer. Catabond is waterproof, weatherproof and highly resistant to washing . . . can be applied in bonding wood that has been rendered fireproof by salt or other impregnation and in bonding wood or other materials to such composition fireproof boards as Transite and Masonite. The resin itself is non-inflammable and resistant to heat up to temperatures that would injure the wood.

Automatic Spraying

More perfect and even than the spray stroke of the skilled operator, this new Binks automatic reciprocating spray machine carries two spray guns back and forth across flat objects moving along on the conveyor. The guns shut on and off automatically, only spraying when they are directly over the ware. This should not be confused with the ordinary swinging-arm type of automatic spraying machine.

The machine shown is used in spraying range parts for the Edison General Electric Appliance Co., Inc.,



Takes the place of a spray operator.

Taxes can make us all "LAND POOR"

WHAT do we mean when we say a man is LAND POOR? We mean that his regular expenses are EATING HIM UP. We mean his overhead is TOO HIGH. He may do as well as the next man in a good year. But when a BAD YEAR comes, he goes DOWN AND OUT.

We used to think a man could not be LAND POOR if he owned his farm outright. We thought just so long as he had no mortgage interest to pay, he could get by.

But that was BEFORE TAXES WENT UP. There's land all over the country today that a man can't afford to take as a GIFT. Even if he owned it clear, TAXES would prevent him from making a living out of it. TAXES have made fair land worse than worthless, and TAXES have made good land WORTH LESS than it should be.

You could stand land taxes IF THEY WERE ALL YOU HAD TO PAY. But taxes are also hidden in everything you buy. Our national tax bill equals one-third of what is spent in STORES. GASOLINE for your car averages 40% to 60% taxes. GOVERNMENT SPENDING NOW EQUALS ALMOST ONE-THIRD OF OUR NATIONAL INCOME.

For years the tax-grabbing politicians have been RIDING the farmer and the city worker alike. Total expenses of government now equal $517.00 A FAMILY. Probably one-third of this is WASTED —or $166.00 yearly per family. IS THIS WORTH SAVING?

Let's stop government waste. Let's replace every tax grabber—no matter what party he belongs to—with a wise, careful lawmaker. Hard-working citizens in city and country can do it if they will TEAM TOGETHER in a non-partisan effort. Here are two things you can do RIGHT NOW. They can't do any harm, and if everybody works together, they can do an IMMENSE AMOUNT OF GOOD.

MAKE THIS RESOLUTION — "I will oppose every political candidate who cannot prove that he has used all his influence to reduce government expenditures."

WRITE THREE LETTERS—one to your County Clerk, one to your Governor, one to the President of the United States. Say, in each letter, just this: *"I want the cost of government reduced."*

VOTE—Give your support to candidates, regardless of party, who WILL cut the waste out of government.

This message is printed by this magazine, in cooperation with the National Publishers' Association, because of a firm conviction that a reduced cost of government is vital to the interests of all its readers.

Chicago, Ill. The same principle can be adapted to other spray problems and is especially recommended where large flat objects are sprayed on a conveyor. A product of Binks Mfg. Co., 3114 Carroll Ave., Chicago, Ill.

Dehumidifier

The Lamson dehumidifier is designed to meet the many demands of industry where the control of humidity is a vital part of processing . . . affords manufacturers an opportunity to introduce controlled dry air into their manufacturing process, regardless of weather or atmospheric conditions. A solution of lithium chloride is the moisture-absorbing agent of the dehumidifier.

View of a small vapor-degreasing unit and a wire basket of parts, which are typical of those cleaned by this method. The vapor-degreasing process is said to be a quick and positive chemical means of removing oil, grease and wax from the surfaces of metal parts to be finished. The solvents are vaporized and this vapor condenses on the metal surfaces, absorbing all grease, oil or wax and removing same by drainage into the bottom of the tank. The solvents are non-inflammable, non-explosive and can be used over and over again.

Its many unique qualities make it ideal for commercial drying.

In the process of absorbing water vapor, the lithium chloride temperature rises due to the liberation of the latent heat of condensation of the vapor plus the slight heat of dilution of the solution. This heat is easily removed by cooling the solution with ordinary water. No special water is necessary and refrigeration is not required. The temperature of the dehumidified air also may rise a few degrees. In some industrial applications, this constitutes a distinct saving of steam required to heat the air to usable temperature.

Because it is a very simple matter to regenerate the lithium chloride solution, it is used in a continuous dehumidifying cycle. In order to keep the solution at the proper strength, all that is necessary is to heat a portion of the solution in a current of air. Under these circumstances, it gives off the moisture which it absorbed from the air while conditioning it for process use. The regenerator is automatically controlled by an electrical device which is set to maintain the desired specific gravity of the solution. In this way regenerating energy is used in direct proportion to operating requirements.

This apparatus is a product of The Lamson Co., Syracuse, N. Y.

U. S. I. Celebrates 30th Year

Substantial expansion in the manufacture of industrial alcohol began 30 years ago, when Congress passed the Denatured Alcohol Law of 1906. At this time the U. S. Industrial Alcohol Co. was organized. Because of the heavy tax on ethyl alcohol before 1906, there was little incentive to find new uses for it. When applied chemistry was coming into its period of greatest development, about 1900, alcohol was used "industrially" for the preparation of medicines, perfumes and, in limited quantities, as a solvent.

At this period certain industries sponsored legislation which resulted in the passage of the Denatured Alcohol Law of 1906. This bill author-

ized the sale of alcohol for industrial purposes free of the burdensome tax.

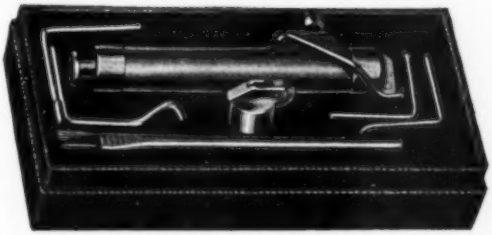
The U. S. Industrial Alcohol Co. was incorporated on October 17, 1906, shortly after the new law was passed, and was ready to deliver alcohol when the law became effective on January 1, 1907.

During the first year under the new law, production for the industry amounted to less than 2,000,000 gallons. This consisted of Completely Denatured Formula Nos. 1 and 2, and Specially Denatured Alcohol, Formula No. 1.

Today, more than 90,000,000 gallons of ethyl alcohol are produced for industrial purposes each year—and U. S. I. is the largest manufacturer in the field. Long experience, combined with the most modern equipment which can be devised, enables U. S. I. to offer products of high quality.

The U. S. Industrial Alcohol Co. and its subsidiary, U. S. Industrial Chemical Co., Inc., are marking this anniversary with special issues of their publications, Alcohol News and Solvent News.

Ten-Day Money-Back Guarantee



U. S. Pat. No. 1,988,710

View of Craftsman Model

Craftsman Kit **$4.95**
Two wheels, five guides and cleaning brush. Packed in a leatherette case. Slightly shorter barrel, otherwise identical with DeLuxe Kit and parts interchangeable.

DeLuxe Kit **$8.50**
Three wheels, eight adjustable guides, cleaning brush. Packed in velvet lined, leatherette case. Chromium plated brass barrel. Hardened stainless steel wheels and axles.

Jumbo Kit is recommended for larger stripes, ⅛-in., 5-32-in. and ¼-in. Two wheels, five guides and cleaning brush. Packed in leatherette case. Price $12.50.

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WHEEL SIZES
No. 16 No. 25 No. 43 No. 73 No. 93

Saw Filings Stain Oak Veneer

We have a problem in handling oak desk tops, and are wondering if you could give us some assistance.

Our quartered-oak veneers frequently have saw filings imbedded in the wood, that make a stain. We have been using oxalic acid and neutralizing this with alcohol. This is done in our sanding room and occasionally, after these desks reach the finishing room, there will be spots of lighter color underneath the finish where the attempt was made to remove this stain. It has occurred to us that it might be due to different degrees of strength of either the acid or alcohol, or both, although our source of supply is always the same.

Can you tell us if there is a better way of removing these stains than what we are using? —S. B. C. Co. (Office Desks).

I have had similar experience on different kinds of woods. I notice that you remove or neutralize this oxalic acid with alcohol. I can see that oxalic acid and alcohol make the stain which doesn't show up until after the wood surface is finished.

The proper way to remove oxalic acid, after it has been applied to a stained spot, is to wash the whole surface (not just the spots) with hot water. This eliminates streaks and spots on the surface after it is finished. Alcohol does not neutralize oxalic acid as completely as hot water.

Let the surface dry thoroughly after the hot water wash; then sand before any of the finishes are applied. If at any time the oxalic acid doesn't prove to be entirely satisfactory, I suggest you try one or more of the prepared bleaching solutions which are now on the market—some of them being advertised in this magazine. —T. R. NALL.

Questions « Answers

Oiled Finish for Bar Tops

In August issue, page 5, I notice a letter from the A. T. Mfg. Co., inquiring for information about an oil finish for bar tops. I have many requests to refinish table tops in an oil finish that will stand hot dishes and other hard service. I most always use an oil stain if the wood needs a stain, as this also answers as a first coat of oil. After this is dry, I coat the wood with pure raw linseed oil to which has been added a small amount of japan dryer to hasten the drying, as it takes several days for a coating of oil to become hard enough to rub.

In some woods you will find glossy and dull spots. These are soft and hard parts in the wood. The gloss can be dulled off before coating again.

Of course, the number of coats to put on will be up to the customer, depending upon how much cost he will permit you to put into the top. You will find, in using oil, that it will slow up production on your work but you will have a high class finish.

SURFACERS

PORES NEED FILLING for smooth - textured attractive finishes. Presdwood, celotex, natural woods, rough metals and porous compositions need quick-drying, easy-sanding, high-bodied surfacers—in short, our CEL-U-LAK Surfacers.

These have unusually high body, coupled with low viscosity, permitting a heavy application by spray; air dry to sand in 1½ hours, force dry at 125° for 20 minutes. They are ground finely and have phenomenal adhesion and resistance to moisture.

CEL - U - LAK Surfacers are standard in white, ivory, dark grey and red. They have for 6 years been an outstanding successful item in our line. We suggest you examine it for your requirements.

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Many old time bars were finished this way and, from time to time while in service, the bar top could be given another coat to keep it in good condition.

Crude oil can be used just as well as the raw linseed oil, and in the same way. The more coats of oil, the higher the gloss. You will need to experiment on some woods before starting, to see if the finish is suitable for the requirements. I have seen the oil finish used on drain boards for kitchen sinks and on many tables where water, hot dishes and hard service were the order of the day. Raw or boiled oil—whichever may be used—can also be applied hot. —J. K. COOPER.

Finishing Gum a Light Maple

In reply to an inquiry in September issue (page 6) under the title "Novelty Finishing," which deals with the above subject, I suggest the following method for finishing gum wood in light maple:

First apply on the bare wood a maple toner or under-tone stain —a thin stain sprayed on at low air pressure. This does not raise the grain. Apply it just a little heavier on light colored places or sap streaks. The wood takes on an amber cast as natural maple.

Second, allow stain to dry two or three hours; then apply a coat of sanding sealer. When dry, sand and brush on maple glaze of the color desired. This can be obtained in any desired shade and is much the same as filler. Then "rag off." A little care will leave a uniform and clean effect. Let this dry overnight and then apply the finish coat, either lacquer or varnish.

This is a speedy and economical process and I think it will prove entirely satisfactory.—JAMES W. MCFADDEN (Cabinet Finisher).

Matched Butt Walnut Joints Open

In the production of our goods we use table tops veneered 5-ply, with the faces of 4-piece-matched butt walnut. In our finishing room, occasionally, we have trouble with the butt joints opening slightly, although these joints are apparently tight and almost invisible before the finishing process begins.

We seem to have less trouble with joints opening when a lacquer finish is applied than when using varnish. For some reason or other, a varnish finish seems to have a tendency to draw the joints apart, although this difficulty is also experienced when using lacquer, but to a less degree than when using varnish. Can you explain the cause of our trouble, and suggest the remedy?—B. F. Co. (Mfrs. of Novelty Furniture).

I've seen a lot of this, but experience and inquiries to veneer people reveal that the usual trouble is caused by not gluing the joints. A large manufacturer of crotch mahogany in Grand Rapids had the same trouble some years ago. After a lot of experimenting we found that if sufficient glue was applied to the joints, we had no trouble. However, if some joints still opened

FOR TOY DUCKS OR LIMOUSINES

Lacquer—regardless of the quality desired or type of product to be finished—can always be *made and used most economically* when formulated with Butanol and Butyl Acetate. Practical experience in scores of factories and finishing plants has built a convincing case for these ideal lacquer solvents. Not only do lacquers formulated with Butanol and Butyl Acetate cut manufacturing costs, but they materially improve the appearance of the finished product as well. Whether you are a lacquer producer or a lacquer user, you can depend on Butanol and Butyl Acetate to save money—give better results—and increase your profits!

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up, we filled them (when they showed up in the finishing department) by using a heavy liquid shellac applied with a broom straw on the joints until they were filled; then we applied the next coat of varnish.

Now regarding the difference between lacquer and varnish on these joints: From my own observation, the reason the joint shows up stronger with varnish is no doubt due to the fact that with the ordinary varnish finish, the depth of the body causes it to look larger. Anyway, I would suggest gluing [the edges of] the joints in the veneer room.—Orrie D. Maal.

Less trouble is likely to be present when lacquer is used as a finish at a butt joint on table tops than when varnish is used, because:

1) The glue sizing used in nominal 5-ply wood has greater affinity for the constituents of a varnish than for a lacquer. Assuming that vegetable glue were used, the liquid being water, the tendency to blend with a basic varnish is greater than with a nitrocellulose lacquer. While it is assumed that the moisture of the wood is controlled, the wood represented by the thin butt veneer is seemingly brittle, therefore it will take in liquid (varnish) quite easily; and, although the sizing has been dried in the glue blocks or presses, the adhesive (glue sizing) is "hungry" for liquid which seeps in at the apparently tight joints.

2) As varnish is applied, the application is presented as a definite full wet film which, in its adhesive desires, "pulls down" into the wood pores. As this varnish finds its way into the recesses of the butt joints, it becomes enmeshed with the glue colloid and, as mentioned, the glue being "hungry" will accept the liquid (varnish) and create a swelling action at the joints.

3) If the butt joints are not tight the tendency to penetrate with a liquid (varnish or lubricant in rubbing) would be greater. The joints should, therefore, be drawn as tightly together as possible.

As a possible remedy for this condition, it has been found that a lacquer sealer, carefully applied over the butt joints and sanded through to the foundation coats, will tend to seal against the entrance of the liquid. The sealer, waterproof when dry, is impervious to the passage of the wet material and further acts as an adhesive at any questionable loose joints.

The sealer, however, should be applied freely and sanded down to the foundation surface (filler) before varnish is applied.

Less trouble should be present with a lacquer system because of rapid evaporation of the lacquer, which will normally act as an adhesive.—M. C. Roberts.

The opening of walnut butt-joints is caused by the expansion of the butt walnut veneer in the process of veneering. The grain of the crossband on the core runs parallel with the butt walnut joint and, no doubt, is a contributing factor in causing the opening of the butt joint.

To remedy this difficulty it is necessary to treat the butt walnut veneer before it is set together into faces in such a manner that the veneer does not expand in the process of veneering.

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material to stop this annoying trouble . . . . —The Liquafill Mfg. Co. (Sizing for crotches and burls).

Model Boat Finishing

I build and race model sail boats ranging in size from 36 to 84-in. in length. These are built up in layers of white pine, and the hulls are thinned down by gouging and sanding to about ⅛-in. You can appreciate the casein-glued joints must be protected to prevent opening up. The raw wood must be impregnated with the first coat. I usually apply five to seven coats, and the finish must be polished as smooth as glass for speed. These hulls are hit by other racing boats; they scrape occasionally along concrete piers or shore lines and are subject to other similar abuses. Drops of water on the deck, and bright sun sometimes causes blisters. All this means that unless the proper materials and methods are used, an owner might as well plan on refinishing each of his boats several times a year.

As a color is generally used above and below the water line, the finishing varnish should not discolor the undercoats.

I would appreciate being told how a model yacht should be finished from the raw wood up to the finest of smooth finishes, both in the natural wood and enameled, and what the best material would be to achieve these results. My problem concerns only fresh water.

I have tried a number of different kinds of enamels and varnishes with only mediocre success—so I have a real problem. —W. M. K.

There are several reasons why you are experiencing difficulty in

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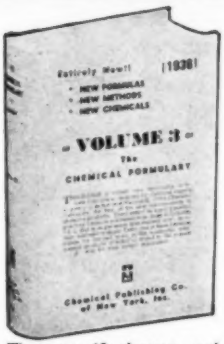

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obtaining the lasting finish desired on your models. I do not doubt that considerable time and effort have been expended, only to have the final results disappointing.

First of all, it must be remembered that white pine is a soft wood, therefore any considerable scraping, crashing or other damage is more apt to ruin any finish through damaging the surface upon which it is applied than if this same finish were on a harder surface. While I may seem presumptious in making a suggestion without being acquainted with the reason for it not being feasible, it would appear to me that if it is possible to construct these models from first-growth spruce (commonly called airplane spruce), which has a straight grain and is almost as easy to gouge and fabricate as white pine, it would eliminate much of the trouble in your final finish. This spruce will admit of a much better and harder waterproof finish than white pine.

But regardless of the kind of wood used, you must observe a few specific rules before attempting to apply the first coat of finish.

Remember that casein glue stains all untreated wood in varying degrees, therefore if a clear or natural finish is desired, it would be well to protect the edges by masking tape or by using extreme care in quickly wiping off the excess glue that squeezes out of the joints. If the glue is allowed to penetrate the exposed wood it will surely stain it, and the only way to remove all traces of this stain is to use a bleach such as oxalic acid. The use of this acid is hardly advisable where a finish is to be exposed to atmosphere and submersion. The stain of casein glue becomes more pronounced after each coat of clear spar varnish has been applied, and this might lead to the mistaken opinion that a colored varnish or enamel was causing this discoloration.

The next precaution to observe is to see that the wood is thoroughly dry. All moisture from the casein glue mixture, which has penetrated the fibers of the wood, must be almost entirely eliminated before applying the first coat of finish. If this is not done the finish will surely blister, check and peel, especially when exposed to bright sunshine. Dry

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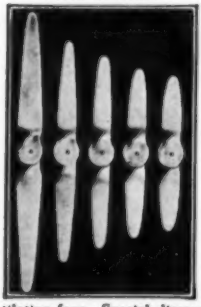

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your model thoroughly in a kiln before the first coat, but do not dry it to excess. In drying, use a sample of the same wood and, using the sample for comparative tests, remove model from kiln or dry room when the percentage of moisture is down to the proper amount. Any experienced wood man can give you the latter information.

Immediately after removing the model from the dry room, and before it has had time to absorb moisture from the surrounding atmosphere, apply the initial coat. This initial coat should be a mixture of one-half spar varnish and one-half turpentine, with a small quantity of raw linseed oil added to slow up drying. Apply this coat freely until the grain has absorbed it to the saturation point. Let this coat dry for at least 48 hours, or until it has a hard, harsh feeling to the touch. Sand thoroughly and dust off carefully.

The filler coat is next applied, using an oil-base liquid wood filler preferably—only using a paste filler where scratches, tool marks, etc., necessitate its use. This will usually dry overnight or within 24 hours. Sand this coat thoroughly also.

If the three operations given in the foregoing have been performed carefully, the following coats are applied in this manner:

Spar varnish, reduced with turpentine approximately 30%, is applied at a room temperature of not less than 70°F., with a relative humidity below 60% for the third, fourth and fifth coats. These coats are carefully applied in a thin even coating, allowing at least 48 hours of drying time after each coat. Sanding between these coats is unnecessary; in fact, not advisable, but the surface should be tack-rag dusted before each succeeding application. The fifth coat should be allowed to dry until the warmth of the hand does not affect the film. (Under proper conditions this is usually 36 to 48 hours.) Then the model should be sanded again

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and a flow coat of full-bodied varnish applied.

A seventh coat may be applied if desired, but in either case the finished surface should not be rubbed until after 72 hours have elapsed. After rubbing with pumice and oil, followed by rottenstone and oil, the model should be carefully wiped and then polished with a mixture of 70% tallow and 30% pure beeswax. This mixture is prepared by heating over steam pipes or in a container set in boiling water—never over a direct flame. Apply sparingly while warm (never too hot) rubbing it into the finish thoroughly. The more rubbing, the higher the gloss and luster obtained.

A word regarding the materials to be used for this class of work. The varnish should be of bakelite base, of which there are several excellent brands on the market. Use the one that is best fitted for your work and for the conditions under which you must apply it. The varnishes I have in mind give best results if applied as outlined. Allowing more than 48 hours between coats might result in poor cohesion, as many of the newer varnishes "caseharden" if allowed to remain too long before recoating. This very feature is ideal from a standpoint of final hardness of finish, but remember to always recoat within 48-hour limit when possible. Of course, if low temperatures, or damp poor drying conditions have prevented the varnish coat drying properly, more time must be allowed between coats and before polishing. This is left to the good judgment of the finisher. Carefully maintaining the work-room and drying room temperatures—

bearing in mind that too heavy a coat of filler or varnish is almost as bad, from a standpoint of durability, as a coating that is too thin or uneven—should result in a smooth hard finish. This method requires time and patience; it is not a production finish, but if the final result and not the cost is the first consideration, this scheme will be found most satisfactory.—GEORGE A. ENDOM.

Canoe Finishing

One of our men has a canoe with which he has had some difficulty in painting. The last time he painted it he used a filler, two coats of some kind of paint and ended up with a coat of spar varnish. The canoe peeled beautifully.

From having read INDUSTRIAL FINISHING for a few years, I know quite a lot of finishing problems are thrashed out through the medium of your publication, and it occurred to me that you might be able to suggest some paint procedure which would give good results on this canoe.

If you do not know what paint and how many coats should be used, could you tell me where I could get this information?—G. D. M.

In the absence of complete definite information concerning the conditions under which the work was accomplished and the various kinds of materials used in finishing the canoe in question, it is difficult to explain the exact cause of peeling of this finish.

Assuming that the canoe was finished from bare, new wood and that the finisher did not attempt to combine two entirely different

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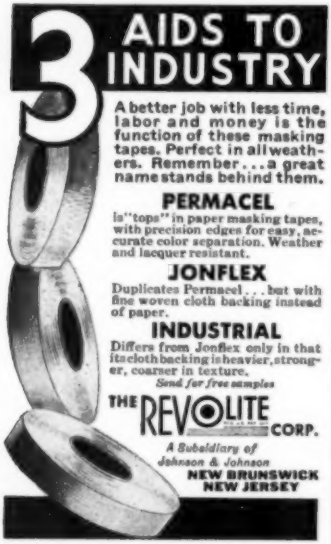
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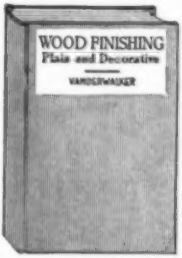

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schemes of finishing; for example, oil-base filler with enamels, or fast-drying filler with oil-base enamels, or any variation of these, the trouble can probably be attributed to one or more of the following causes:

1) If the entire finish peeled down to the bare wood, the wood was not dry, or the filler did not penetrate properly, or the filler was applied in such a manner that it resulted in too thick a coat. When filler is used, either on wood or metal, it is always advisable to remove all excess material beyond that actually required to fill the grain, pores and hollow spots. Beyond this, the filler coat should be cut down, either by sanding, wiping or otherwise, until it has been almost entirely removed.

2) If the two coats of paint peeled, it is quite possible that: a) the surface was damp; b) the paint was not properly formulated to be applied over the filler; c) the filler was too hard and had not been sanded to give "tooth" to the succeeding coats of paint; d) the two coats of paint were applied too soon after application of filler or without allowing sufficient drying time between coats; or, e) the spar varnish applied over the paint had greater flexibility than the undercoats and caused the bond of adhesion to break when subjected to extreme changes of temperature.

3) If only the final coat of spar varnish peeled, it is possible that the moisture on the surface of the paint caused poor adhesion so that when the surface was subjected to the sun's rays, if there were any traces of water under the varnish, it would cause this

coat to blister or peel; and if it did not do this the varnish coat would probably spider or check into minute cracks.

There are many other reasons why the finish of one or all of the coats of paints and varnish might peel, but one good thing to remember is that when applying spar varnish it is advisable to maintain a fairly warm temperature in the room and to keep humidity as low as possible.

In an early issue of INDUSTRIAL FINISHING, several alternate methods of finishing wood boats will be given. Some of these are the most modern approved ways of accomplishing this work for both appearance and durability.

Following these suggestions carefully and applying the method best suited to the class of finish you desire—not forgetting to purchase high quality finishes from reputable manufacturers—should result in your obtaining the exact kind of finish you desire on the canoe.—G. ENDOM.

Letters from I. F. Readers

(Continued from page 9)

along with bar top finishes—both the lacquer and the varnish finishes. A short while ago we heard of a "hard oil" finish that is reputed to stand up better than either lacquer or varnish, but have not been able to obtain this material locally (Pittsburgh, Pa.). One local supply house claimed they had it, but when it was delivered the can was marked: "Hard Oil Size" for use in sizing up a plaster wall before papering or painting. We are interested both in the oil finish and the hard oil finish, and would appreciate information on both.—J. D. Co.

Briar Pipe Finish

We have the January 1935 issue of INDUSTRIAL FINISHING, and are interested in same. Kindly send us a sample copy. We refer you to the January 1935 issue, on page 34: Sub-

SUNBRITE BRONZE POWDERS

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BESIDES fully describing modern shop technique, this book coordinates metal finishing processes and finishing problems with the over-all problem of manufacture. The usual types of finish, such as galvanizing, polishing, plating, lacquering, and painting are thoroughly treated, as well as many new finishes of a specialized nature. An important feature of the book is the section on cleaning and descaling. Throughout, both technical and commercial aspects are considered in detail in an endeavor to point the way to more attractive metal finishes and to more efficient means of producing them.

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ject, "Briar Pipe Finish." We are interested in getting in communication with the manufacturer of the lacquer for pipes. Will you kindly give us the company's name and address?—H. C. Co.

It's Roxalin Flexible Lacquer Co., Elizabeth, N. J.—Ed.

Refinishing Golf Balls

We notice several inquiries recently in INDUSTRIAL FINISHING for information or methods or equipment for refinishing used and soiled golf balls. We have complete outfits for this work—for cleaning, painting and polishing the balls. Supplies are shown in the accompanying illustration.

Notice the two blocks (one white, one black) each with a semi-spherical cup-like hole (like an old fashioned coin till) into which the golf ball fits easily. One of these blocks is to be fastened securely to a piece of board about ⅝x2½x12-in., which should be fastened to a work bench so the end holding the block projects out 5 or 6-in. in the clear to permit one to use a polishing cloth in the manner of a bootblack shining shoes.

Place old ball in polishing block, pour a small quantity of cleaner over it and rub ball thoroughly with brush. After brushing, dampen the cleaning cloth in water and use over ball in same manner as when polishing shoes.

To refinish the ball, tie a piece of string 8-in. long to an ordinary pin, press pin securely into ball and dip ball into refinishing enamel until it is completely covered. Lift ball and hold it over the can to allow excess enamel to drain off. Hang balls up with string to dry. We recommend two hours for drying.

To polish the refinished ball, remove pin in string, place ball in the cupped block and polish with a polishing cloth in the same manner as polishing shoes. — MILLER - TROJAN Co., Troy, Ohio.

Supplies include cleaning liquid, refinishing enamel, polishing blocks, brush, pins and string and polishing cloths.

Golf Ball Painting

On page 7 of August issue of INDUSTRIAL FINISHING, we note an inquiry from G. L. P. for information relative to material and equipment on golf ball painting. If you will kindly give us the name and address of this inquirer, we will appreciate it. Or notify them to the effect that if they will get in touch with us we can be of service to them, as we have made and are making a satisfactory golf-ball enamel and also have information relative to most satisfactory equipment. — Fred'k A. Stresen-Reuter, Inc.

Lacquered Wood Turnings Turn White

We are having some difficulty using lacquers on wood, in having the finished turnings turn white several weeks after the finish has been applied. This is not "blushing" but rather a fine white powdery film which forms on the outside of the surface. This can be rubbed off but it appears again a few days later.—E. T. G. Co. (Brush Handles).

Dipping Machines Coming

We now have in the course of construction, a new dipping machine that will be built on a much larger scale. It will have a lifting capacity of at least 300-lbs., and it will be built to dip any size article. It will be built just as the customer wishes. In other words, if he wants a machine 4-ft. long and 2-ft. wide, he can have it. The machinery will be all exactly the same. The only difference will be that the base of the

machine will be extended as desired for the large and small articles. This is going to be a wonderful machine . . . .

Our engineers also have another machine in mind. It is going to be an automatic dipping and drying machine. This machine will dip the articles and also dry them. As soon as we get photographs of both of these machines, we will send some to you.—Northern Machine Mfg. Co.

Graining Tools

I would appreciate finding out the names and addresses of manufacturers who make graining pads and rollers for the imitation of wood graining on metal—of which I now do, but all by hand graining.—W. S.

Pressed Wood Finish

We are manufacturers of storm shutters made of pressed wood. This is quite absorbent and we are having some difficulty in getting suitable paint which will stand the rigors of sun and wind down here. (Miami, Florida)—C. & C. Co.

Non-Chipping Lacquer

We manufacture myrtle wood novelties and put on a finish that is second to none. We spray on four coats of sealer and at least three coats of lacquer. Each coat is sanded and the last one is rubbed to a very high gloss. We are now using a water-white sealer and clear lacquer. The sealer and lacquer are ideal to work with and give a wonderful gloss, but the finish chips easily when the finished novelties are dropped or bumped.

We want a durable finish similar to the above—only one that will stand more usage and not mar or chip so easily, and which has good adhesive qualities. Can you refer us to a manufacturer of a clear lacquer and sealer of this quality?—R. R. Co.

The demand for portable electric rubbing machines that have a "to-and fro" movement, as in hand rubbing, still continues.

In all automotive finishing and refinishing, we expect bright, lustrous finishes, as these imply newness, and they are easy to wipe clean.

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EDITORIAL

Put Spray Guns in Order, or Buy New Ones

Service men in the field report that in many factories considerable material is being wasted and poor finishing results are showing up—all because the spray guns in service are not in good working order. This is especially the case, they say, where some of the new synthetic finishes are being used.

It seems that in coming out of the Depression, many concerns have spray guns that are obsolete or badly worn or in very poor adjustment—and the workmen or foremen are either afraid to report the poor condition of their equipment, or they are so inexperienced that they do not recognize it.

Judging from the conditions reported in several factories, the best move that management in those concerns could make, to save money in their finishing departments, would be to throw away all old spray guns and buy new ones. The expense of wasting material through the use of obsolete, worn out, or improperly adjusted spray guns goes on continually and becomes greater as production increases. Likewise, the saving in finishing materials, through the use of improved spray equipment, increases daily and in direct proportion to the greater volume of production.

"Unscrupulous Manufacturers"

In the routine of editing an article recently, the Editor came across a statement about a certain product being made by "unscrupulous manufacturers who are only too anxious to dump inferior products on the consumer, with little regard for their future welfare." These are strong words, which, if taken seriously, are likely to undermine some readers' faith in manufacturers in general. A man may make this kind of a statement in the heat of discussion or argument, but we believe he departs far from the cold facts.

We can't imagine any manufacturer of durable goods being anxious or eager "to dump inferior

products on the consumer". It costs so much money to make initial sales of even cheap goods that manufacturers must rely upon repeat orders to stay in business. Repeat sales can only be made where the product is satisfactory and the price is right.

Of course, some manufacturers may make the mistake of going too far in lowering their costs—so far that their products are cheapened beyond the point where they are a good buy, even for the customer who is looking for something cheap. Eventually the manufacturer of an overly-cheapened product learns of his mistake through customers' complaints and a falling off in sales. A manufacturing concern has too much money invested in plant, equipment and organization to undertake a policy of willful dishonesty.

Manufacturers with whom we are acquainted are more eager to point with pride to truthful testimonials like this: "while buying from you for over 30 years, never found any shortage; materials A-1 always. Long may you do business", which just came to our notice from a concern that deals in industrial finishing materials.

Conveyors for Finishing Departments

The well sustained increase in the demand for goods of all kinds is being felt in factory production departments and is prompting many executives to seriously consider means for stepping up the rate of output in their establishments. Among the several inquiries for new equipment it is significant that some are for conveyors to be used in the finishing department. While the use of conveyors has become quite commonplace in numerous finishing rooms, there are thousands of other factories where such equipment has not even been thought of.

Here's a typical inquiry from the president of a furniture manufacturing company:

"Do you have any information on conveyor systems and forced drying systems in finishing rooms of furniture factories? We understand that conveyor systems in finishing rooms effect quite a large saving in labor, yet at the same time help to produce a desirable finish. We are interested in some information on the subject."

We have seen conveyors used effectively in the finishing rooms of several manufacturers of both wood and metal furniture. Selection of the type of conveyor to use and the planning of its installation is really a job for experienced conveyor engineers.

In some cases a power conveyor is not needed. An overhead track can be installed and parts to go through the finishing process can be hung from hangers attached to trolleys operating easily along this overhead track. Such a layout furnishes a convenient way to move parts along a prescribed route to and from the spray booths and through the drying area without actually handling them on and off trucks or portable racks. It does away with stacking and trucking, and when a helper is available to keep the trolleys moving, the spray man can work continuously. A step farther is to apply power to the conveyor and do away with the helper. Another step is to set up

automatic spray guns and do away with spray operator.

Where the interval of time required for spraying amounts to several minutes, a moving slat-bed type of conveyor may be used, and when large items come to the spray booths they are lifted off, placed on the turntable, sprayed and then replaced on the conveyor.

In the cleaning and finishing of metal parts the conveyor may be part of a large machine that automatically washes, rinses, dries, dip finishes or spray finishes, and bakes or force dries the finish, and then cools the surfaces of the parts in one continuous process. A number of companies specialize in designing, building and installing this automatic and semi-automatic equipment for various types of finishes. Where there is large production of identical or similar items to process, the conveyor or automatic machine soon pays for itself in the economical and satisfactory work performed.

Editor Wants Articles From Practical Men

Men who have anything to do with the performance, maintenance or supervision of finishing operations, and those who buy, sell, demonstrate, or test finishing materials, supplies, or equipment are invited to write and send in articles to Industrial Finishing. Short or long, with or without illustrations, handwritten or typed —they are all welcome and whatever the Editor can use "as is" or in rewritten form, will be published and paid for. Articles about the application of finishing coats to leather, rubber, canvas and paper are particularly desired; also, metal cleaning and finishing, wood finishing, etc. Lists of other subjects will be furnished on request. This invitation is especially extended to practical men in the industry who have never written before.

Ferbert-Schorndorfer Co. Elects Officers and Directors

At a meeting of the Board of Directors of The Ferbert-Schorndorfer Co., Cleveland, Ohio, the following officers were elected:

S. C. Schorndorfer.....President
David Andrew .....Vice-President
W. E. Gillette.....Treasurer
C. J. Weber.....Secretary

Also the following directors: S. C. Schorndorfer, E. H. Ferbert, J. E. Neiding, W. E. Gillette and David Andrew.

Degreasing Metal; Trial Offer

A 4-page folder just issued by Detroit Rex Products Co., 13005 Hillview Ave., Detroit, Mich., illustrates three of their standard Detrex Degreasers which are offered for trial in plants desiring to increase the speed and reduce the cost of their cleaning operations. It is also pointed out that a complete line of alkali cleaning compounds and strippers is manufactured by this company, thus providing a complete service for both kinds of cleaning operations.

W. P. Yant Joins Forces of the Mine Safety Appliances Co.

The Mine Safety Appliances Co., Pittsburgh, Pa., announces that it has secured the services of William P. Yant, well known to American industry as chief chemist in the Health Division of the U. S. Bureau of Mines. Effective September 1, Mr. Yant became Director of Research of Mine Safety Appliances Company, with whose activities as the world's largest manufacturer of approved safety equipment, his own work at the Bureau of Mines for years has been closely associated. His investigations and developments there for the betterment of working conditions in various industries have won him national recognition as one

of the men chiefly responsible for the great progress made in industrial safety.

He has conducted and directed much of the fundamental work on the dangerous properties of gases, and the practical hazards from industrial gases, vapors and dusts; the development, testing and approval of gas masks and respirators for mine and industrial usage; methods for the detection and analysis of gases; mine ventilation and control of mine fires; stream polution and many similar industrial problems.

"Finishing for Aluminum"; Title of New Book

A new illustrated book of 60 pages 5¼x8¼-in., attractively bound, has just been published by the Aluminum Company of America, Pittsburgh, Pa., "to assist users of aluminum in solving their finishing problems." Chapter heads include: Mechanical Finishes; Chemical Dip Finishes; Electrolytic Oxide Finishes; Electroplating on Aluminum; and Paint, Lacquer and Enamel Finishes. The contents are interesting, informative and practical.

Aamot Becomes Chief Chemist for Perfection Paint & Color Co.

The Perfection Paint & Color Co., Indianapolis, Ind., announces the appointment of Mr. H. C. Aamot as chief chemist in charge of all research work. The company has just completed the erection of a new laboratory building where Mr. Aamot is working on all types of enamels, paints, and varnishes for industrial and trade sales.

Mr. Aamot has an extensive education in paint and varnish chemistry. He is a graduate of the University of Oslo in Norway. Mr. Aamot then took a special varnish course in Halle, Germany, under the widely known professor, R. M. Salzmann, and a second post graduate course in Vienna under the direction of Mr. L. E. Andes.

Cudner & O'Connor Offices Moved

The Cudner & O'Connor Co., Chicago, Ill., announce that their offices have been moved to 4343 W. Kinzie St., but the factory is still at 4335-37 W. Kinzie St.

U. S. I. Is Building New Experimental Laboratory

Increased facilities for the study of plant processes and the development of production control will be provided in a new laboratory being constructed by the U. S. Industrial Chemical Co., Inc., at Baltimore, Maryland.

The laboratory will be housed in a single-story, 69x33-ft. brick structure, fireproofed throughout, with steel framework, concrete foundations, pre-cast cement roof and steel sash and doors.

One section of the building will provide space for pilot plant operation, while another will be fitted with modern laboratory facilities including completely equipped, tile-top tables.

An additional section on the south side of the main building will contain showers and lockers, as well as offices for members of the technical staff.

Will Cover Eastern Pennsylvania for Beckwith-Chandler Co.

Beckwith-Chandler Co. (varnishes, paints and lacquers), Newark, N. J., announces that Mr. E. R. Bohlan has joined their sales organization to cover industrial accounts in eastern Pennsylvania.

Mr. Bohlan was formerly connected with the Larkin Co. of Buffalo, as divisional manager in the Philadelphia district. Previous to that time he was in the purchasing division of International Motor Co., Allentown, Pa.

C. M. Malott, of Indianapolis, Paint Manufacturer, Dies

Mr. Chas. M. Malott, a leading paint and varnish manufacturer, died in his home in Indianapolis on September 11, after an illness of 2½ years. Mr. Malott was President of the Indianapolis Paint and Color Co., and of the A. Burdsal Co.; also Vice President of the Lilly Varnish Co. He came to Indianapolis in the early '90's as representative of the Glidden Co., and in 1921 he and three other men bought the Lilly Varnish Co. Purchase of the A. Burdsal Co. followed in 1925. Mr. Malott was a member of several prominent organizations in Indianapolis. He is survived by a widow, a brother and a sister, all of Indianapolis.

Classified Advertising

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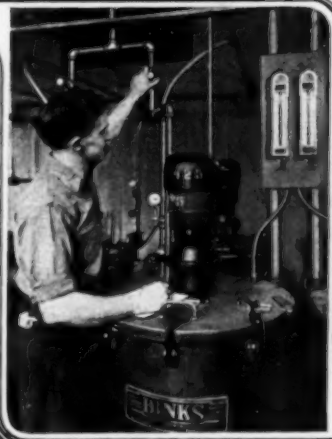

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